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For a better working world

CHANGING WORK

**Progressive ideas
for the modern
world of work**

EDITED BY
Yvette Cooper MP

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SOCIETY**

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The Changing Work Centre was established by the Fabian Society and the trade union Community in February 2016 to explore progressive ideas for the modern world of work. Through in-house and commissioned research and events, the centre is looking at the changing world of work, attitudes towards it, and how the left should respond. The centre is chaired by Yvette Cooper MP and supported by an advisory panel of experts and politicians.

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FOREWORD

Andrew Harrop
Dr Ernst Stetter

The UK's decision to leave the EU will have profound implications for the UK and perhaps for other EU member states as well. But whatever shape Brexit ultimately takes, Britain and the rest of Europe will continue to live alongside each other, in the same mutually-dependent economic world. That world is shaped by the way we work. Across the whole continent, experiences of the labour market are changing fast, in the face of social, economic and technological forces which national and EU institutions can influence but not control.

In recent times economic globalisation and technological automation have already reshaped our societies and labour markets; and over the next decade or two, the pace of change will be at least as fast. This collection of essays assesses key dimensions of the way work is being transformed. Contributions examine new technologies, such as Google's DeepMind which goes beyond automating routine tasks to carrying out intellectual and even emotional labour, and they look at how a modernised education system, reformed trade unions and meaningful employee voice can sculpt a progressive response to these changes.

Many of the responses to the changing world of work are best left to workers, employers, local authorities and national governments, but in the face of global forces

international cooperation and partnership are essential too. That will remain true whatever the UK's exact relationship with Europe. In particular, it is in no one's interests for a 'race to the bottom' on social and employment standards. If anything, in the future labour market, workers will need more opportunity, support and protection from their governments, not less.

Our particular interest in this book is how the centre-left and the labour movement should respond to labour market change. Across Europe the bonds between low and middle earners and traditional social democratic parties have been fraying, just at the time people have faced stagnating living standards and rising economic insecurity. In the UK those factors contributed to the vote to leave the EU, which was most strongly supported by non-graduates. But the UK experience is not an isolated example and social democrats across Europe must respond to these trends.

To do that, when it comes to the politics of work, we must start from the perspective of people's daily lives at work, not the big-picture of technology and global economics. Political leaders need to tell a credible story of what they can and will do to increase opportunities and reduce risks, in an everyday language rooted in people's own experience of work.

INTRODUCTION

Yvette Cooper

Labour has always believed in the dignity of work – the pay cheque that keeps kids out of poverty; the promotion that helps people get on; the sense of purpose; the defeat of idleness; the lifeblood of communities where everyone knows they have responsibilities and a part to play.

Our party was forged in the furnaces, factories and coal mines of the industrial revolution. The trade unions and the Fabians came together to pursue a parliamentary route to socialism – fighting for an end to exploitation, for good jobs, full employment, and the universal welfare state that was essential to achieving social justice and equality in an industrial society.

Over the decades, as work changed with technology and globalisation, Labour adapted its policies and ideas too – still keeping work at the heart of our identity. As new higher skilled and professional jobs emerged, Labour championed social mobility as well as social justice, investing in science and the white heat of technology, education, new universities, the unionisation of public sector workers. We fought for new rights for women, and an end to discrimination, as well as the national minimum wage, tax credits and Sure Start.

And Labour wanted everyone to get on, to make the most of their talents and potential, every child to get the

very best chance in life. So we seized on new routes to tackle inequality, end child poverty and redistribute power.

Today, the world of work is changing faster than ever – thanks to globalisation, accelerating technological development and demographic change. For some people, new and amazing opportunities are emerging. But many others face new insecurity and desperate exploitation and inequality is growing.

As Cameron Tait argues in the opening essay of this collection, work is changing dramatically now. The labour market is hollowing out as technology and globalisation replace jobs in the middle – while the number of highest paid and lowest paid jobs grow. Productivity and earnings have stagnated. The workplace is atomising and fracturing. Micro-businesses and self-employment are increasing, so too is agency working and crowd working. More women are working, older people work longer and more people have come here to work from abroad.

The impact of technological change – with amazing leaps in science, digital technology, health care, big data analytics, robotics, artificial intelligence – is profound, and we could be on the cusp of changes to work that are more radical than anything we have seen since the industrial revolution. But the truth is that there aren't enough of these brilliant new jobs being generated and too many people are being locked out of new opportunities or left behind.

Software platforms are changing the way people do business and the way we work, providing new opportunities for some, but none of the workplace rights traditional work guaranteed. And coming down the track is artificial intelligence and robotics, designed not just to augment human labour or to make it more productive, but directly to replace it.

Modern capitalism is failing to stop widening inequality and injustice. Sports Direct owner Mike Ashley is worth

nearly £5bn – enough to pay the wages of every police officer in England. And yet his business’ success has been built on zero hour contracts and clever ways to circumvent the minimum wage. As the Bank of England and the IMF have recognised, the scale of inequality is hampering economic growth.

And there are consequences for our communities and politics too. Cities have become more diverse, vibrant, creative places with new jobs, new businesses, new ways of working springing up. But old manufacturing workplaces have declined, and with them the industrial solidarity that first created the Labour party. Trade union membership has fallen, especially in the private sector. Towns that once were defined by their industry – and once were Labour heartlands – have lost some of their sense of identity too.

These economic, community and political changes are the backdrop to some of the difficulties the labour movement is facing now. At a time of growing inequality, significant social, industrial and economic change, we need a strong progressive political response now more than ever.

Yet social democrats are in danger of looking irrelevant and failing to keep up. We are losing our traditional support as the working class fragments and people’s sense of identity changes. Trade unions aren’t reaching those in insecure work, including those who need workplace representation and protection most.

The Labour party isn’t inspiring those who want to get on, or empowering those who feel angry at their lack of control of their lives. Right now we aren’t offering hope to those who want new opportunities or security to those who feel threatened by change. Just as the Labour party grew up to offer a powerful response to both the opportunities and the inequality of the industrial revolution, now our revival depends on having a new and strong response to the opportunities and inequalities of the digital age.

That is why it is so vital and so urgent that the progressive left rises to the challenge of changing work. Because the prosperity, social justice and social cohesion of our country will depend on it. Our historic passion for equality, opportunity and social solidarity, and our historic fight against injustice and exploitation are more important now than ever.

Work has always given us in the Labour party our own sense of common purpose, our own sense of identity, and our own vision of the future. So we need to renew ourselves now around a strong vision of the future of work, common purpose, empowerment and equality in a digital age. Much as we may argue amongst ourselves about whether we are too right wing or too left wing, the right question is whether our whole labour movement is being left behind.

The left needs to understand the huge global forces affecting the workplace, the changing patterns and opportunities in work. And we have to set out a vision of inclusive prosperity underpinned by strong reforms where everyone can benefit from technology and globalisation rather than see too many people and communities left behind.

At the heart of that must be a vision for full and fulfilling employment that shows how Britain can compete globally and create more good jobs in a digital age. We cannot rely on the policies and solutions from the industrial revolution, we need new ways to build a fairer and more equal society that empower everyone and stop exploitation. That includes looking afresh at the new social compact needed to provide security and solidarity for working people, as well as reshaping trade unions to support people in a different fragmented working world. We need to seize on new ways of building common purpose, social solidarity and community.

That is the purpose of the Changing Work Centre – set up by the Fabians and the Community trade union. This

collection of essays is the beginning of that process. These are not the conclusions of the Centre's work. Instead, they are ideas and provocative thoughts from different contributors designed to spark debate.

At the heart of the changing world of work is the phenomenal pace of technological change. As Norman Pickavance argues, technology is radically changing the labour market. He warns of competing tendencies – towards extraction and exploitation (such as the mega warehouses that shadow the motorway networks with low skilled agency workers on zero hours contracts), towards anxiety and insecurity, but also towards connectivity and the human touch (as new technology helps revive and crowd fund small industries powered by creativity, craft and community). He argues the left needs to reassert the moral value of work and recreate a connection between humanity and the economy which has been disappearing since the industrial revolution

Simon Franks also warns of the serious risks of technology colliding with society as we know it – pushing up unemployment, stagnating wages, reducing tax receipts from global companies, and increasing poverty. He argues for a radical approach to modernising skills for a digital age, and new thinking to stop economic power being concentrated in the hands of a few owners of technology, while everyone else gets left behind.

Other contributors reflect on the profound impact of globalisation on employment, society and politics. Academics and politicians have argued that it was communities most adversely affected by globalisation (losing manufacturing jobs to China) that were most likely to vote to leave the EU in the referendum. Now China, India and other countries are competing with us for high skilled and high tech jobs, not just low skilled manufacturing work. And the globalisation of labour is having profound effects too as communities struggle to adjust to the pace of migration.

they work, whilst Standing focuses on the new ‘precariat’ class, arguing the left must respond to its fears and insecurities or risk the populist right filling the gap.

Reforms to the state, to industrial policy, skills and welfare, is the focus for Anthony Painter and Anna Turley. Both highlight rising levels of insecurity of work, but whilst Painter argues for the state to concentrate on income and security as a platform for work, Turley argues for an active industrial policy to use the potential of the digital revolution to generate jobs in the towns and cities who have lost their industry to globalisation.

These wide ranging analyses and contributions show both the scale of the challenge, and also the need for radical new ideas and policies on the left, if we are to tackle poverty, inequality and injustice in the digital age, and give everyone the dignity of good work.

At a time when the country’s economic prospects are deeply uncertain as a result of Brexit, and when Theresa May has established such a right wing cabinet, the Conservative government shows no sign of being able to meet the challenge.

As Charlotte Holloway argues, too little is being done to deliver the skills revolution we need, or to make sure the millions who still lack digital skills aren’t left behind. Social security, protection and solidarity are being undermined not modernised for a changing world. Tax credits are being cut back, employment rights taken away, trade union protection hit and public services squeezed.

That’s why we need new progressive ideas, and a Labour government able to put them into practice. When the Fabians and the trade unions, the methodists and Marxists, the co-operatives and the Christian socialists came together to found the Labour party, they created a powerful movement.

Never Luddite, always progressive and enthused by new ideas. Never narrow, always internationalist. Always

with strong values and fierce determination, but also hard headed and practical about the need for parliamentary power.

That is what our Labour party needs to do again now. To resist the temptation to be either Luddite or romantic about what technology will bring. To be true to our values, learn from our history and lift up our eyes towards the future of changing work.

1 | WHAT'S REALLY HAPPENING IN THE WORLD OF WORK?

Cameron Tait

While record numbers of people are in employment and some good jobs are being created, there are three key trends which define the changing world of work: hollowing out, stagnation and atomisation. It is only by understanding the true nature of these trends that policy makers can begin to formulate solutions to the growing anxiety, stress and insecurity in the UK's workforce today.

A steady stream of dystopian warnings of a 'rise of the robots' has produced plenty of excitement about an imminent end to work as we know it. It can feel from reading books like Nick Srnicek and Alex Williams' *Inventing the Future* or Martin Ford's *The Rise of the Robots* that paid work will soon be a thing of the past, and depending on who you listen to, we will either be fighting for scraps in a violent and divided society or enjoying the luxuries of a fully automated communism. Yet these visions seem at odds with the monthly labour market figures showing record high employment rates and rising wages. This makes for a confusing picture.

Others in this collection set out why we might be heading for a 'new normal' in the world of work, and many of the things we take for granted – not least a healthy supply of jobs – could be set to change forever. But before we start to

envision these new futures, it is important to get a sense of what has been happening in the world of work up to now. Because while the robots aren't yet at our doors and jobs and wages are on the rise, change is already happening, and these changes are contributing to a growing sense of insecurity and anxiety in Britain today.

Early diagnoses of the motivations behind over 17 million people's decisions to vote leave in the EU referendum paint a picture of unease. There is a growing sense that people lack power and agency to make decisions about the things that affect them. This is in many ways the story of the changing world of work, in which technology and globalisation are not only transforming the shape of labour markets, but transforming labour itself.

This change, therefore, poses a political challenge to leaders in business, politics and society to take action to address increasing levels of anxiety in a labour market that provides security and meaning to fewer and fewer people. But before action is taken, it is important to be clear about what is really happening.

Three trends in the world of work

While record numbers of people are in employment and some good jobs are being created, there are three key trends: hollowing out, stagnation and atomisation.

Trend 1: Hollowing out

The first key trend over recent years has been the rise of what economists Alan Manning and Maarten Goos call "lovely and lousy" jobs. The increasing impact of technology, and in part globalisation, on the labour market in recent years has led to a decline in 'middle tier' jobs. These are characterised by their ability to be routinised, and therefore automated. The jobs in decline

can overwhelmingly be found in manufacturing, as well as clerical jobs, where new equipment and operating systems have replaced the need for routine manual and cognitive labour.

In the mid-19th century, we really were a nation of makers. Over one third of the UK's workforce was employed in manufacturing. In 2000, it was down to 13 per cent, and in 2014 the jobs which were once the lifeblood of British industry accounted for just 8 per cent of the workforce.

As these middle tier jobs decline, 'lovely and lousy' jobs are springing up in their place. At the top end, we have witnessed strong growth in professional and managerial occupations like business and financial services. In the six years between 2008 and 2014, ONS figures show the number of professional services jobs rose by 15 per cent, now accounting for 2.4 million workers. These jobs tend to be non-routine, highly skilled and extremely well paid.

At the bottom end, however, we're seeing an increase in low-paid, low-skilled, low productivity jobs. The number of hospitality jobs, including bar, hotel and restaurant workers, has increased by 16 per cent since 2000, now accounting for 7 per cent of the workforce.

The 'lovely and lousy' jobs trend appears to contradict George Osborne's 2011 promise for a renewed 'march of the makers'. In fact, the data shows it appears to be the waiters, rather than the makers, who are on the march in modern Britain.

Trend 2: Stagnation

While wages are beginning to pick up, average earnings remain well below their pre-crisis peak. The stagnation of wages has been a feature of the UK labour market since the financial crash in 2008 and has left many households

struggling to keep up with living costs. The limited (and at times non-existent, or even negative) wage growth over recent years is linked to the UK's stagnant productivity performance, and the spectre of another recession following the UK's decision to leave the EU will do nothing to calm fears over a further squeeze in living standards.

The Nobel Prize winning economist Paul Krugman famously said of the link between productivity and living standards:

“Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.”

The stories of average wages and productivity in the UK over recent years appear to bear Krugman's theory out. Both productivity and earnings saw steady growth until the financial crash, and following a period of stagnation, both are now on the rise again. However, both productivity and wage growth remain limited and it would be reasonable to question whether or not they will continue as the UK economy continues to reel from the EU referendum outcome.

Trend 3: Atomisation

The labour market is becoming more atomised with a trend towards microbusinesses and self-employment and away from larger firms. The number of self-employed workers has grown by 38 per cent since the turn of the millennium, with 1.2 million more self-employed workers in 2014 than in 2000. To put this into perspective, this growth in self-employment is greater than the total number of people employed by Tesco, Sainsbury's, Asda, Morrisons and the John Lewis Partnership combined.

Commentators like Mark Holweg have attributed the rise in self-employment to “Britain’s enduring entrepreneurial spirit”. But the data shows this shift should not be characterised by the coffee shop dwelling freelancer or the Silicon Roundabout start-up. In fact, recent research from the Social Market Foundation has shown that self-employed workers are more than twice as likely to be in low pay as people in employment, and 1.7 million self-employed workers are missing out on the ‘national living wage’, as it does not apply to them. In addition, Resolution Foundation research shows that as the numbers of people in self-employment has grown, earnings have fallen – by as much as 20 per cent between 2006 and 2014. This implies that these new self-employed jobs tend not to be as financially rewarding as the old self-employed jobs.

The change is real

The jobs data shows us that there are three key transformations happening that are reshaping the labour market at the macro level that raise important public policy challenges. But the world of work is not just a technocratic issue. The changes that are happening are experienced in different ways by people at work every day. In this sense, the world of work throws up political challenges too. Public attitudes research shows that changes in the world of work are creating higher levels of anxiety, stress and insecurity. Political leaders wishing to repair damaged relationships with leave voters should view the world of work as a great opportunity to rekindle relationships with people at the sharp end of globalisation and technological change. It will be important for policymakers to consider shifts in attitudes to work alongside the macro-level labour market changes.

One key shift in attitudes is in job insecurity. Increasing levels of insecurity can be found right across the UK workforce. The LLAKES Skills and Employment Survey showed that between 2001 and 2012, the proportion of people afraid of losing their job grew from 17 per cent to 25 per cent. Using different methodology, the British Social Attitudes Survey found that in 2015, 35 per cent of workforce did not think they had job security. Based on today's job figures, that means 11 million people feel they lack job security – more than at any point since records began in 1986. The emerging world of work has pushed insecurity up, now affecting more than one in three workers.

As well as feeling insecure, workers are reporting that work is more intense and more stressful. In a major study of job quality in affluent countries, Francis Green found that workers felt that the effort they were required to put in had strongly intensified. This finding is reflected by more recent studies in the UK, including the British Social Attitudes Survey which found that the proportion of people finding their work stressful had steadily risen from 28 per cent in 1989 to 32 per cent in 1997 to 37 per cent in 2015. A 2016 Smith Institute survey also found that 68 per cent of workers feel they are working harder than two years ago, with respondents identifying technological advancements as a key driver of this. One participant in a recent Fabian Society focus group with supermarket workers explained this transformation in their work, saying “we all went into retail, we made friends, it was like a family atmosphere...and you knew your customers...[but] now you have none of that, it's almost like you're a robot.” Set against a stagnation in wage levels, this raises serious questions about reward in the changing world of work: are people being adequately compensated for working harder and the associated stress created by this?

Perhaps more worrying for society as a whole is the finding that many workers feel their work is meaningless today. YouGov found that 37 per cent of British workers – around 11.5 million people – feel their job is not making a meaningful contribution to the world. Similarly, the British Social Attitudes Survey shows that 32 per cent of British workers do not feel that their job is ‘useful to society’. This high level of meaninglessness has been seen by Ruth Yeoman at Oxford University as part of a decline in values of cooperation and solidarity in society. The crisis of social purpose in the changing world of work has also been picked up by leading members of the business community, such as Richard Branson at the Virgin Group, or Tim Brown at IDEO, who have urged the business community to be more ‘purposeful’ to address this increasing detachment between work and society.

The challenge

The signs are that while the prospect of full automation and a jobless world does not seem to be on the cards for some time, change in the world of work is real, and people are already feeling it. For some time labour market economists have been identifying concerning trends in the jobs market, and the three trends set out here – hollowing out, stagnation and atomisation – will be far from revelatory to those close to the data. But the really striking shift is in public attitudes towards work.

The whys and wherefores of the UK's decision to leave the European Union will be analysed and argued about over the coming months and years. But there does appear to be a consensus emerging that many of those that voted to leave the EU did so because they felt an anxiety and insecurity from the pace of change in their lives and in their communities. It is therefore no coincidence that

these same themes can be clearly identified in Britain's workforce.

The changing world of work is certainly not the only reason behind 52 per cent of the UK choosing to opt for Europe's exit door. But in the same way that people's experience at work is linked to the wider economy, it is a part of it. And conversely, while not all the answers to people's sense of anxiety, insecurity and lack of agency can be found in the workplace, many of them can.

It is therefore absolutely essential that if our leaders – in politics, business and society – are able to regain the trust from people that feel 'left behind' by change in their country, they must address their fears and anxieties in the world of work. While it is crucial we anticipate how the world will look in the decades ahead, it is even more important that we properly understand how the world of work is changing right now. Only then can we find the solutions to the growing anxiety in the UK's workforce today.

2 | THE NATURE OF WORK

Norman Pickavance

As technology radically transforms our labour markets, our political economy stands at a crossroads. There are three competing tendencies in the future of work: towards extraction and exploitation, towards anxiety and insecurity, or towards connectivity and the human touch. The left must intervene to ensure the latter wins out, in doing so reasserting the moral value of work and creating a connection between humanity and the economy the like of which has vanished since the industrial revolution.

Work shapes our lives, it has the power to change the way we think and how we behave with and towards each other. Good work can bring a sense of identity, expression and meaning. At its best work can provide a vehicle for creativity, an opportunity for people to flourish and for friendships to develop. Contemporary disruptions in established patterns of work have the potential to further diminish this creative, human element in work, but, if mobilised effectively, they also have the capacity to usher in a new era of work in which it rediscovers its moral and meaningful character.

Beveridge understood the value of good work when he identified five giant evils facing society, and recognised that want and idleness were directly correlated to an absence of, or inadequacy in work. His report in 1944 contained a timeless truth. Work is good for the human

condition, its absence is harmful and the provision of good work is central to the creation of a good society. Given this insight, and with the benefit of time and perspective, I would therefore consider adding two more 'evils' to the Beveridge list: drudgery and penury. Both are caused when work is devalued to such an extent that it has the capacity to erode a person's basic sense of self, trapping them in in-work poverty such that their very humanity and spirits are sapped.

The nature of work therefore extends beyond economic discussion about rates of pay, it provides a vital building block in the way we choose to live our lives. Seen from this perspective, businesses aren't merely engines of economic growth, but also precious social mechanisms. Through the very nature of the work they create for people, they can at their best act as agencies for human betterment, but at their worst they can be asylums of misery.

Having a distinctive point of view about the nature of work we are creating as a society should therefore be a central concern for us all. Yet in order to have a credible perspective, we first have to fully grasp what is currently happening both within and to the world of business and understand the changes which are already shaping the way work is going to look through the rest of this century.

We are at the beginning of what some have described as a second machine age or fourth industrial revolution. It is a new and highly disruptive era, one in which we will see accepted practices turned on their heads. It will redefine not only the world of work but also the way we lead our lives. Much as steam and coal transferred muscle to machine power, this revolution has the potential to transfer brain power to artificial machine intelligence.

Where will this leave us all?

A complicated, messy picture is emerging. In this essay I have attempted to codify what is happening into three basic scenarios.

An age of extraction

The first is the 'age of extraction', a world where business believes there is an economic logic in extracting the maximum value for the minimum cost, with no thought given to the human or social consequences. This is a dystopian future designed with people operating as mere cogs inside global supply chains. Welcome then to the dark side of the gig economy, where low productivity, low pay and low job security masquerade as efficiency, freedom and opportunity.

In the age of extraction, businesses find little incentive to invest in capital equipment, or to train their workforce. The result is commoditised workers with minimal rights, and little voice in the workplace. At its worst this world has already ushered back in bonded labour and human trafficking, rife again in producer countries and creeping into the UK, as workers on the factory fishing vessels operating off the coast of Scotland will testify.

We also see it in the mega warehouses that shadow the motorway networks, with people undertaking low-skill tasks as temporary or agency contractors on zero hour contracts; where products ordered online are taken the last mile or so to your home by drivers with the status of self-employed workers. For more technical or tailored tasks this is the world of the freelancer, working on short term contracts without job security or rights to the sick-pay, holidays or pension provisions of their fellow, permanent colleagues.

Some would say a highly flexible workforce is a recipe for efficiency. However, all the evidence shows the opposite, that productivity in one of the world's most flexible labour markets somehow lags the more human-centric models of Scandinavia.

An age of anxiety

A second scenario is also emerging, an 'age of anxiety', disguised as a world of aspiration. It is a world where business is being radically reshaped by new technologies. A robot revolution, leading to what business claims will be 'fewer but better' jobs. The revolution will impact everyone, from sectors where there have traditionally been large numbers of lower skilled jobs, like retail, to the professions where artificial intelligence and algorithms will perform the data capture, number crunching and analytical tasks currently performed by qualified groups of accountants, lawyers and insurance and bank workers.

Academics at Oxford Martin University predict up to 35 per cent of jobs in the UK could go as part of this robot revolution. This then gives us the 'hour glass economy', divided between the few people at the top doing intellectually challenging and complex work and the many at the bottom with no access to secure work and little chance of ever escaping their fate. The content of the 'better' jobs that are left can sound fascinating. However, work is moving in the opposite direction for too many people, as the last vestiges of humanity in the workplace are being sucked out from their jobs.

It is as a consequence an increasingly unhappy, unequal and unstable world, where economic insecurity and mental illness stalk everyone's worst nightmares.

An age of connectivity

An alternative world of work is also emerging, one which places greater value on humanity and has the hallmarks of greater connectivity. In this world, technology enables rather than defines the future, and the highest value is placed on working with, and being of service to, each other. This alternative world foresees large organisations

surviving only if they provide a greater human touch and a heightened sense of community in the way they deliver their products and services to customers.

It would be a world where smaller -scale organisations are able to compete with global behemoths because they are combining technology and community to form new ecosystems of work. This future model puts personal relations and 'making' skills back at the heart of commerce. This then is a truly social economy, where people recognise that there is value in what they personally contribute, create and share.

This is a future where people bring their whole selves to work. It is a world where individual 'makers' and small businesses are able to offer their wares to the whole globe on shared accessible platforms. Where advanced technology is enabling a new wave of distributed manufacturing, and people can produce highly sophisticated products on a micro level. It's a world where unique ideas, innovation and authenticity can and do compete with scale.

It suggests a more artisanal environment, where people value unique things over mass-produced products and the handmade over the machined. It's a world which supports a 'circular economy' where quality products are built to last and can be reused, repaired and recycled rather than thrown away. It may seem inefficient to think of an economy where things are repaired rather than dumped, but with the internet of things, technology will enable complex diagnoses to extend the life of products and move us decisively away from a throwaway consumerist society.

For those who struggle to imagine how such a shift could take place we only need look at the boom in Britain's micro-breweries, a trend which global mega brewing brands are struggling to react to. Cities such as Sheffield now have over 50 brewers making craft beer, cumulatively employing hundreds of people. This sense of creativity,

craft and community combined is the signature of this new work environment.

Another example of how creativity and craft are combining is emerging out of the use of 3D-printing in the eyewear industry. In some ways, the possibilities provided by new technology are bringing the eyewear industry back to its origins. Back in the 18th century Clerkenwell and Farringdon in London were the centres of an international industry dominated by hundreds of tiny workshops performing eye tests, shaping lenses and making frames. Whilst the UK industry grew and experienced a boom under the free spectacles era of the early NHS, it collapsed after privatisation moved production offshore.

However, in the past five years acetate cutting machines used in frame manufacture, that once cost upwards of £1 million, are now accessible to new entrants at as little as £3,000. As a result new businesses are springing up. Highly entrepreneurial, they have funded their growth thanks to crowd-sourcing and multiple investors putting in small amounts of cash, all from within their community.

Deb Oxley, CEO of the Employee Ownership Association, says this crowd-funding trend is appealing to many tech start-ups, who are increasingly interested in shaping environments where people can work collaboratively, sharing in the fruits of their labours. It is a mini-revolution in its own right and in many ways reminiscent to the development of the co-operative movement.

It shows how the quality of the work and the community in which it happens are interwoven environments in which small has finally become beautiful again. This pattern is not only about small entrepreneurial activity. The prices of solar and wind-power generation are now within reach for individuals or communities and battery storage means that communities can become fully self-sufficient. As a result a new kind of interdependency is emerging where all aspects of the economy intersect: small

business, not for profits, government, the creative sector and social enterprise. It is creating what some are calling a new fourth sector, at the heart of everything.

This new thinking is starting to unpick the old siloed, rigid and hierarchical working that has dominated so much of the 'bigger is better' industrial-era mentality and replacing it with smaller, localised, distributed models.

To work it will require a newly invigorated sense of local democracy as these new creative craft communities encourage people to act more autonomously, be more accountable and work in a more balanced way. It will require individuals with broader sets of skills, creating and caring again about their work and the communities in which it happens.

Conclusion

It is easy to forget that industrialists once argued that it was economically desirable for children to crawl under weaving machines and climb up chimneys. For the first time in over 70 years we need to once again reassert the moral dimension of work, to return to that aspect which Beveridge so clearly recognised, to acknowledge that a failure to provide good work allows evil to rear its head in society. We need once again to argue that the absence of good work is not only instrumental in causing poverty but also undermines communities and is detrimental to our mental, physical and social wellbeing.

We therefore have to look closely at each of these very different scenarios, to understand who the real winners and losers are, and where the true costs fall. Only then can we move beyond focusing policy on the issues caused by the absence of work, and start to form ideas about how the nature of work itself can contribute not only to the nation's economic fortunes, but also be woven into our thinking about the fabric of a resilient, sustainable and inclusive society.

3 | PREPARING FOR THE REVOLUTION

Simon Franks

Technology, one of the greatest testaments to human genius, is heading for a collision with society as we know it. A surge in unemployment, stagnant wages, reduced tax receipts, increased public deficits, and increased poverty and inequality will result if we do not quickly put our minds and hearts to improving our social and economic models.

If you happened to be on the streets of Pittsburgh on 19 May 2016, you may well have witnessed a black car that looked akin to that driven by superheroes, driving itself. If you are a taxi driver this will be a cause for concern. It was an Uber.

Uber is not alone. Google, Apple and General Motors are all working on autonomous vehicles. And then there are the start-ups. Zoox is one of 13 companies that has received test licences from California. Already valued at over \$1bn, Zoox believes it can deploy a fleet of fully autonomous vehicles by 2020.

Taxi drivers and their families are not the only ones who should be concerned. Late last year in Baden-Württemberg, a Mercedes lorry was driving itself at 50 miles per hour, along a busy section of motorway.

There are 600,000 HGV registered licensed drivers in the UK; 242,200 licensed taxi and private hire vehicles and around 1.8 million people in the expanded logistics

workforce. Many will be delivery drivers, couriers, van drivers or small lorry drivers.

Such ground breaking technologies are just the tip of the iceberg. It is not only professional drivers who need to worry. We all do.

The World Economic Forum predicts more than seven million jobs in the world's largest economies will be threatened in the next few years by advances in fields such as robotics and 3D printing. According to the *Future of Employment* report, 47 per cent of jobs in the US are at risk of being automated over the next two decades and 57 per cent across the OECD. These will not necessarily lead to unemployment: new jobs could emerge in their place. But there is at the very least a need to plan for this eventuality.

This is not the first time that a technological revolution has threatened us. In the 1970s and 80s, mainframe computers and robots had a huge impact. Since then our manufacturing workforce has fallen by 60 per cent.

For those made redundant, this technology was a curse. For the wider economy, it was a blessing. Increased productivity has led to total manufacturing output today being 6 per cent higher over the same period.

Some commentators, such as Dr Robert Cohen, argue that as in the 70s and 80s, the fears over the consequences of new technologies are exaggerated. It is true the changes in the 70s and 80s were mitigated by substantial growth in service sector employment. But this time, technology is impacting the service sectors too.

Klaus Schwab argues that "this revolution is fundamentally different in nature, characterised by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries".

Today automation and artificial intelligence are progressing at a speed, scale and force unlike anything we have experienced before. Sooner or later the challenge

of human redundancy will have to be reckoned with. Machines are now capable of cognitive functions; we are heading towards a time when machines will be able to independently solve problems, overcome complex decisions and learn. Google's DeepMind's ability to beat various human gaming champions is especially remarkable not just because the technology ultimately prevailed, but because DeepMind largely trained itself.

Machine learning is likely to be the primary catalyst behind a surge of applications in automation and robotics and a nearly limitless number of specialised applications. Collectively, these systems are likely to span the entire job market and economy. Already, the automated intelligent response technology behind virtual assistants (assistants that are already taking the jobs of real people), is no longer futuristic nor at the cutting edge. Rather, robots, artificial intelligence, computerised algorithms and mobile sensors are the new vanguard. As the Brookings Institute put it, they are here and set to "transform human life".

Ultimately then, we should assume that computers will replace effectively all manufacturing and most routine based jobs, while artificial intelligence and deep learning technologies will lead to the destruction of many white collar professional jobs. When a robot can read a set of accounts, analyse a million emails or phone records, write annual reports, why employ a lawyer, researcher or accountant?

Richard Susskind agrees that the "traditional professions will be demystified, routinised and commoditised". Doctors, academics, pharmacists, engineers be warned. As these 'good' jobs begin to evaporate, faith in education and training as the solution to technological disruption of the job market will erode.

In contrast, the sharing economy may seem quaint by comparison but it is also another significant threat to jobs. Airbnb, for example, now dwarfs even the largest hotel

chains but still has under a thousand employees compared with Hilton's 164,000.

Policy needs to meet this challenge head on. Not just the challenge of the loss of jobs but also the fact that the benefits from this tech-driven productivity surge keep accruing to an ever smaller group. Just as businesses need to adapt, our government must too.

With its perennial trade and budget deficits the UK already has structural issues to contend with in addition to the technological challenge. Fortunately it also has some big advantages. We have a great science base, a great technological base, a great creative base and a great entrepreneurial base. We have to build on them all. Eventually technology can deliver us large productivity gains and economic growth. So long as public policy tools are devised to ensure a fair distribution of the spoils, this productivity increase will enable everyone to be better off.

Meeting the challenges

Unemployment, skills and education

Many new jobs and opportunities will be created as technology develops. Any country needs to have the skills to exploit them or others will; it is not a given that all will share in the fruits of this latest revolution.

For the UK specifically there are real dangers. We already have a chronic skills shortage which will only intensify given that manufacturers expect their demand for skilled workers to rise. As an adviser to many companies I can tell you that I hear time and time again that we cannot get enough people with the right skills. In my view it is this that holds many UK companies back, not the lack of finance. How frustrating when so many of our population are stuck in low paid jobs.

Labour's agenda on skills and apprenticeships is heading in the right direction, but has much further to go.

An education system that is fit for purpose is an imperative. Transforming what and how we teach is critical. Everything is changing. Our education system must be more responsive to the needs of employers. Instead of pushing so many into the university system we need to improve our vocational and technical colleges so that they offer an exciting and relevant alternative.

Our core curriculum should be mathematics, reading and writing, coding, problem solving and free thinking. Education should be collaborative, research-based, and self-directed; it should relate to real world challenges and have input from employers and trade bodies. In doing so we should ensure that every child regardless of background gets the chance of economic advancement by ensuring they can keep up with the skills demanded in the economy. As new jobs replace old jobs, we must equip people with the skills to adapt.

Encouraging entrepreneurialism and supporting business

Access to technology will soon be ubiquitous and many are already able to invent new products and services cheaply and quickly. The business models of each and every industry are being transformed.

We have to support our companies capable of scale so that they benefit from this state of flux. Unless they are successful in new technologies, the UK will face certain comparative decline. Entrepreneurialism must be engrained culturally across all of society not just at private schools. We will need more start ups and more companies able to scale up to a globally significant level.

We can do this. It takes much less capital to start a digital business compared to the capital intensive industries of old. Thanks to the Enterprise Investment Scheme (which we must expand to support more mature scalable businesses) there is already plenty of finance available to

start ups. The small business research and development tax credits scheme likewise needs refining and expanding.

Taxation

Technology, like global trade, increases overall prosperity but creates winners and losers. So much of technology is focused on driving corporate margins that most of the benefits accrue to capital whilst the corresponding job losses pass liabilities on to the already stretched welfare state. We have to establish how to compensate workers as their share of national income shrinks and as jobs disappear. Without managing the distribution of the spoils society could easily fracture.

There need not be a dystopian outcome. It is not just, or sustainable, for corporate profits to have an ever increasing share of GDP whilst real wages flatline, despite huge gains in economic output. In such an environment, middle class workers will continually be squeezed. They will not be the only ones. We have already witnessed large public companies being put out of business by private companies, often majority owned by just a few individuals. This further exacerbates inequality. Not only do the millions of owners of publicly owned companies lose their investment but the few who benefit are notoriously under-taxed.

In order to prevent the wholesale abuses we see today, we need to make dramatic changes to our approach to tax and push our European partners to do the same. Without adequate tax on the owners of technology and without investment in education and skills, we are heading back to the world of barons and serfs. Serfs whose only economic function is to serve the wealthy.

Taxing the owners of technology is not simple however especially as technology owners can be entirely remote. Governments are going to need new tools, new laws and new ideas to adequately tax the owners of technology.

Governments are going to need to innovate in the same way that entrepreneurs innovate.

Industrial policy

The UK is in desperate need of an industrial strategy. One that funds research and development and supports companies seeking to commercialise our scientific excellence. We need to support our home grown technology companies. Despite our vibrant start up scene, the UK's most exciting companies often never make it to global status partly because they get acquired by US firms before they get there. We should develop both sticks and carrots to encourage businesses to stay British. But we should also make sure that we do not end up nationalising the risks of innovation whilst privatising the profit. To prevent this, British companies that receive state support should guarantee that their company headquarters will remain in the UK, they will pay corporate tax in the UK, their company founders will stay tax domiciled in the UK and their investors will pay tax on gains in the UK.

Trade unions

Embarking on a new industrial policy without a full partnership with trade unions would be folly. For any renaissance in the British economy we are going to need healthy and vibrant trade unions, respected by business with a new sense of shared mission, and partnership. A new collectivism with trade unions at the heart of it.

To meet this role, unions must modernise, drop the class warfare rhetoric, and stop clinging to old dogmas. Unions have many reasons to feel aggrieved but they have to move on if they are to serve their members well. Workers today need strong, representative, forward-thinking, pragmatic, unions. Trade unions that see the dangers

and opportunities of this digital revolution. In return for a compact such that we see in countries like Germany, government should roll back much of the egregious anti-union legislation that has accumulated over the past decades.

Preparing for the revolution

Despite how it may feel, we are not at the end or even the middle of the digital revolution. We are perhaps only at the end of the beginning. From the perspective of history we are at the equivalent point of having laid down the tracks for the railways, but only witnessed a few engines testing them.

It is probable that in the developed world, the digital revolution has thus far created more jobs than it has destroyed. But we are yet to witness the incredible destruction that the application of the newly developed technologies will unleash. All of this portends a social, economic and political disruption for which we are completely unprepared. Widespread unemployment (or even underemployment) has clear potential to tear society apart. It also carries substantial economic risks: in a world of declining jobs where will demand growth come from?

Not preparing our country adequately will lead society to a very harsh destination. It doesn't have to be this way. Technology can lead humanity to the promised land. Fewer working hours, less disease, improved human efficiency, smarter learning and greater understanding and communication. But unmanaged it could also lead us back to a desperate period of neo-serfdom.

4 | THE PRECARIAT DILEMMA

Guy Standing

A new global class structure is taking shape, with a growing precariat as the mass class lacking any meaningful sense of belonging. The precariat requires progressives to respond to its unique fears, insecurities and aspirations – or else the populist right will fill the gap.

We must rescue the values of work from the dictates of labour. Socialists, communists, social democrats and Labour parties fell into a trap in the 20th century when they placed salaried labour on a pedestal, conceptually and in policy terms. All work that was not labour – for example, care work and community work – disappeared from economic and social statistics and from political rhetoric. It was regarded as a political success if as many people as possible were in jobs, working for bosses. A fiction was born that doing dirty onerous jobs somehow gave dignity, status and even happiness.

This labourist bias meant that the most valuable work of all has been left out of labour statistics and rhetoric, that of caring for others. Today the need to overhaul labour statistics is intensified by two facts that reflect the changing nature of work and labour.

First, the group I have been analysing, the precariat, has to do much unrecognised work-for-labour and work-for-the-state. Second, the silicon revolution is the first

technological revolution in history to be generating more work while disrupting labour, a paradox that has yet to be adequately appreciated, but which is generating a growing literature on *heteromation* (extra work generated by electronics) alongside a vast one on *automation* and the impending 'march of the robots'.

The new global class structure

A new global class structure is taking shape. In descending order in terms of income, at the top is a *plutocracy*, an elite of global citizens mostly living off ill-gotten rental income. Below this is a shrinking *salariat*, with employment security, good salaries, access to capital income and pensions, alongside a growing group of *proficians*, those flitting between contracts but making lots of money. Underneath is a shrinking *proletariat* – the constitutional base of social democratic and labour parties.

It is the two groups below this proletariat to which social democrats have failed to appeal, and worse, have not even tried: the *precariat*, which is rapidly becoming the mass class of worker in all industrialised countries; and the *lumpen-precariat*, or underclass.

The precariat is definable in three dimensions. First, those in it are being pressured to accept a life of unstable, insecure labour. This is the aspect that is most often cited, but is not the most crucial. More important is that they lack an occupational narrative, as well as a corporate or organisational narrative. They do not *belong*, and are not in the process of doing so.

This is one reason for avoiding a generational focus, which implies that while youth are experiencing more insecurity they will eventually obtain what the previous generation obtained, only with a longer delay. The precariat do not feel they are developing through labour and work. This reality is linked to tighter occupational and

labour market regulations and the impact of globalisation and the silicon revolution.

The precariat has to do a lot of work-for-labour that is neither recognised nor remunerated, but which if not done can have severe consequences. This adds to the stupidity of the conventional concept of 'work'. We have moved from an era of *industrial time*, in which activities took place in neat blocs, into one of *tertiary time*, in which many activities crowd into any definable unit of time, and in which work and labour are done off workplaces and outside 'working time' as much as on them and inside it. This makes conventional labour statistics even more unfit for purpose. For the precariat, it also involves the constant threat of the *precariatized mind*, the feeling of being out of control of one's time.

Another point about labour relations is that this is the first emerging mass class for whom the modal level of education is greater than the modal level of labour they can expect to obtain. That is one of many reasons for rejecting the claim by some (mainly Marxist) critics that there is nothing new about today's labour market.

Before considering the second dimension, it is worth stressing derivative aspects that will shape the future of work. First, because of globalisation and the commodification of firms, more people will find themselves in positions in which to make progress occupationally, they will have to relocate geographically, even if they stay in the same firm. This will create stress, add to costs and disrupt any sense of career.

Second, there is a new kid on the block that will disrupt labour relations radically. This is crowd labour. Although heterogeneous, it is ushering in a new worker category, which should be called *taskers*. (It would be misleading to call this employment or self-employment. Elsewhere, I divide the app-driven labour into a concierge economy, crowd labour and 'on-call' employment, the

latter embracing zero-hour contracts.) Within a decade, probably one in every three labour transactions will be done online, outside formal employment relationships. This will expand the ranks of the precariat.

The second dimension of the precariat is that it has a distinctive social income. Those in it must rely mostly on money wages, which are stagnant in real terms, and increasingly volatile and unpredictable. Statutory minimum and living wages will not overcome the resultant insecurity. The precariat lacks non-wage enterprise benefits that comprise a large security-providing component of the salariat's social income; it is also denied rights-based state benefits. Successive governments in Britain and elsewhere have made the situation worse by opting for means-testing, creating poverty traps in which the precariat faces marginal tax rates of over 80 per cent, losing benefits as they enter low-wage jobs. Tax credits fail to overcome this, and bring a host of problems of their own.

The unfairness is compounded by precarity traps. Many people wait weeks or months before they start receiving benefits to which they are entitled. If they succeed, then taking low-wage casual jobs would be irrational, since besides the marginal tax rate of 80 per cent on earned income, they would face the prospect of having to start the process of claiming benefits all over again very soon. Completing the vicious circle, successive governments have responded to the lack of incentive to take low-wage jobs by making social policy more directive and punitive, with sanctions and deductions becoming the norm. The endgame is workfare, where people are required to work for their benefits. A progressive should wish to reverse these trends. Introducing more contributory schemes would not resolve the crisis, and might make it worse. The precariat simply would not qualify.

A correlate of the fragile income is that most live on the edge of unsustainable debt. One accident, error of judgment or illness could lead to tumbling into the lowest group in the class spectrum, the lumpen-precariat, a growing badge of shame on all of us.

This leads to the third dimension of the precariat. It is the first emerging class to be losing all forms of rights – civil, cultural, social, economic and political. This is why I call them *denizens*, a medieval term used to describe those who on entering a town were given a more limited range of rights than the town's citizens. The precariat's systemic loss of all forms of rights has yet to be adequately documented, but there are ample signs of it. To consider the future of work without recognising this trend would be deplorably utilitarian.

In sum, the precariat is not an underclass; it is becoming the mainstream for those calling themselves workers. It is incorrect to use the terms 'precarious work' or 'precarious worker'. The term precariat refers to the fact that those in it are *supplicants*: they lack rights – customary as well as legal or statutory, with the former being just as important as the latter. They must ask for favours, be obsequious, plead with authority figures, rely on their generosity and pity. In it, you do not have an assured base of support. You are *dependent* on others. Ironically, the right has been allowed to capture the word dependent to mean something else.

The politics of the precariat

This class structure is being reproduced within corporations, government agencies, academic institutions, NGOs and trade unions. Each tends to function with an elite, a salariat, a shrinking proletariat and a growing precariat. So, for example, the legal occupation is sharply fragmented into a rent-extracting elite, a beleaguered salariat and a growing precariat of stressed paralegals. The

medical professions have elites, a salariat and a growing precariat, who lack security and means of upward mobility. The same applies to the teaching and academic professions, in engineering, catering, and so on. In each case, it is becoming harder for the precariat to break into the ranks above, while it becomes more of a disadvantage to stay put.

The precariat suffers from the four A's – anxiety, alienation, anomie and anger. It is thus today's dangerous class for several reasons. It rejects the old mainstream political frameworks. In a positive sense, part of it at least is looking for a revival of work as creative, varied and self-controlled. William Morris and John Ruskin would have understood. However, the biggest immediate challenge comes from the fact that it is internally divided and has been at war with itself. Roughly speaking, there are three factions.

First, there are the 'atavists', consisting of those who have fallen out of old working-class families and communities. Not having much formal education, they tend to listen to far-right populists, who play on their fears. Social democrats have failed to respond to this insecurity and angst. This does not mean they should reach for the language or policies of the right, which they have tended to do, and which seemed to be the gist of Jon Cruddas' assessment of Labour's failure to win the general election of 2015, suggesting that Labour was not hard enough on benefit claimants. Nor will crude nationalist rhetoric work. The left must offer a progressive agenda based on empathy, not ape a reactionary one based on moralising.

The atavists are responding to the likes of Donald Trump, Victor Orban, Marine Le Pen, the Lega (Northern League) in Italy, UKIP and other populists. That will continue until a progressive alternative is articulated, involving nothing less than a new income distribution system, based on principles of universalism. The international trend

to populism is a new reason to support moves towards a basic income as an anchor of that distribution system.

The second faction in the precariat consists of migrants, minorities and those with disabilities. They tend to keep their heads down, mostly staying out of politics, although they occasionally react to their insecurity and growing denizen status with days of rage. While limits to immigration must be kept for pragmatic reasons, it is essential that the left oppose class-based migration policies and realise that means-testing actually exacerbates anti-migrant sentiment.

The third faction in the precariat should be called the progressives. It is this group that social democrats have alienated most. It consists of those who go to university or college, who were promised a career, a future, one of ontological freedom, a life of personal development in which work predominates over labour, in which leisure can be enriching in terms of self-respect and dignity. They emerge without that prospect, with debts and without having obtained a liberating education either. For them, Labour has failed so far to lift the dialogue from the pedestrian and materialist.

In short, politicians on the left must respond to the insecurities, needs and aspirations of the precariat, and to all of its components. For that, it must recognise the precariat explicitly; and it must struggle for *representation* for it in every institution of the state, and define policies that would redistribute the key assets that matter most for the precariat. That is feasible. But it will require more engagement and understanding than has been shown so far.

5 | RETHINKING SKILLS POLICY FOR THE AI ERA

Charlotte Holloway

Much has been made of the negative impact of technologies such as robotics and artificial intelligence for the workforce. But technology, used well, can be a power for huge social and economic good. We must rethink approaches to policy-making to better understand how the UK's strengths in AI could supercharge the economy and bring new opportunities for employment.

Just as the original Luddites failed to stop changes in the cotton and wool mills in the 19th century, we must not now try to hold back the tide of technological change. It is often stated by economists, including at The Work Foundation, Deloitte, the OECD and others, that each technological advancement has created more jobs than it has destroyed. Whilst this may be true, there is a wider imperative here. Political parties must get real and think smarter and more collectively about how to mediate new challenges and opportunities posed by new technologies – whether that be on data ethics, government-industry collaboration or funding environments.

Of particular importance is making sure we have the right policy frameworks in place to harness talent in this new era. New technologies like artificial intelligence (AI) and robotics are good news for both people and GDP, and the dual mission of creating a world-leading talent base

in these areas whilst mediating the impact of robotics and AI on the wider workforce must be at the heart of future skills policy.

Why technology is good news

The dawn of robotics and AI bring with them important potential social and economic gains. They can boost productivity, economic growth and, if implemented and shaped correctly, personal and societal wellbeing. All countries will want to seize these benefits, and with estimates indicating a global opportunity of nearly \$50tn in the next 10 years, it is critical for the UK's ongoing competitiveness that these technologies and the companies behind them have an encouraging policy environment here in the UK.

For companies, that environment is just as much about wanting to locate and invest in areas bursting with talented people who can think creatively and keep pace with the latest projects and products in their companies.

The UK has a great track record with its world-leading universities, but it's time to break open the education model to ensure people right across the country, and not just those who have attended university, have the opportunity to work for and even found companies which represent some of the best economic news on the planet.

There have been a wide array of predictions for how AI will develop over the next decade, ranging from AI being used as a tool to aid relatively simple processes (which some refer to as 'narrow AI') to robots being developed with humanlike mental capabilities (which is often referred to as 'general purpose or strong AI'). As Sir Nigel Shadbolt, founder of the world wide web, has stated, "What we really have in AI is a whole spectrum of abilities, from programs that are smart but they are not smart like us, to programs that are super clever in specific areas".

The course of this parliament will see a major shift in the growth of AI, towards the next phase of machines that make choices on their own. Self-learning machines can adapt to situations and make decisions without the aid of human intervention, such as in the case of self-driving cars. The recent win in the Chinese strategy game Go by Google's DeepMind technology, developed in London, against the reigning world champion is seen as a ground-breaking step forward in the development of AI technologies, helping to drive global recognition of the UK's leadership.

The evolution of robotics and AI will play an increasingly significant role in our daily lives. Whether the impacts are positive or negative will depend, to a sizable extent, on the decisions and actions that technologists, businesses, researchers, policy makers and governments take over the next few years. If existing jobs are phased out, augmented, or new roles created, then it is the role of policy makers to work hard to understand this. All countries will need to think deeply about the policy interventions and steps needed to ensure that they are beneficiaries of these changes that are happening globally. UK policy-making has no option but to keep pace with technological change – the change is global, but our policy responses can be national, regional and local as well as European and international, enabling UK people, as workers, as citizens, as consumers, to gain from these advancements.

Policy makers must make it a top priority to facilitate a policy environment which is successful in two areas. Firstly, creating access to a world-leading talent base for the development, adoption and exploitation of robotics and AI. Second, mediating the impact of robotics and AI on the wider workforce where existing jobs may be at risk of partial or full-automation.

Creating access to a world-leading talent base

The UK's ongoing potential in tech and the digital economy must be matched with a robust and growing talent pipeline to realise the full opportunities of the digital economy. As Baroness Martha Lane-Fox, Lord Knight and others have repeatedly argued, the digital skills gap is one of the most urgent policy challenges facing the UK. Recent estimates suggest the UK is already losing a potential of £2bn a year from unfilled roles requiring digital skills – the scale of the growing gap over the next decade cannot be underestimated as new technologies such as robotics and AI are developed and adopted.

Robotics and AI workers are in very high demand, in areas such as software development, systems design, engineering, programming and data science, all of which have been reported areas of domestic shortage right across tech firms in the UK. Robotics and AI systems are complex and interdisciplinary, requiring a broad range of knowledge, understanding and skills. Companies are crying out for more people that have skills in logical thinking, reasoning skills, mathematics, computational linguistics, programming, and engineering.

Leadership in artificial intelligence and robotics is directly linked to leadership in higher education and academic excellence. The UK is good at this stuff, and despite uncertain economic times ahead, we must continue to prioritise investment in pure science, advanced mathematics and the value of pure research.

Policy makers must look closely at how the UK ensures that the world's future AI talent wants to come and study at our leading universities – that means a smart migration policy which attracts and welcomes the very best from the EU and across the world. The closure of the post-study work visa and wider government policy on migration risks sending that talent to competitor countries. International talent in our universities raises our own departments' game and UK academic talent rises with it.

The UK must be able to compete in the ‘global race’, and this has never been truer in a post-Brexit world. We must radically rewire our school system for these jobs. Whilst efforts such as the introduction of the new computing curriculum are good strides forward, we must get serious about the scale of change needed to equip our young people to thrive in these new industries.

At this year’s SXSW conference, President Obama committed to invest \$4bn in computer science teaching. By comparison, the UK government is committing less than £4m into training for the delivery of the new computing curriculum. And only half of ICT and computing teachers surveyed by Nesta in 2014 reported they were confident in their ability to teach the computing curriculum. Maggie Philbin was right in her 2015 digital skills review for then Labour leader Ed Miliband that this needs to be dramatically stepped up. If we don’t get this part of the skills pipeline right from primary school age, we risk missing out on a generation of girls and boys who will be key in helping the UK fulfil its AI and robotics promise in new types of fulfilling, high-value roles.

Mediating the impact on the wider workforce

Whilst there are differing views on the impact of robotics and AI on the wider UK labour market, we can be certain that the nature of many jobs will change. For example, the rise in the use of systems will see many repetitive tasks being delivered by autonomous machines. This is a fundamental issue that must be addressed so that the UK can prepare for such a future, and should be a top priority for policy makers. For example, Andy Haldane, chief economist at the Bank of England, has suggested that 15 million jobs in the UK are at risk of automation by smart machines over the next 20 years.

Deloitte recently published *Transformers: How Machines are Changing Every Sector of the UK Economy*, which outlines the potential impact of automation on each sector and region of the economy, and examines how automation and technological advance have impacted jobs growth and creation within these sectors.

The headline findings of this work are valuable in assessing these risks. The sector with the highest number of jobs with a high risk of automation was wholesale and retail, with 2,168,000 jobs with a high chance of being automated in the next two decades. This was followed by transport and storage at 1,524,000 jobs, and human health and social work at 1,351,000 jobs. Manufacturing saw the largest net decline in jobs over the 15 year period with 720,000 jobs lost, 90 per cent of which were those with a high chance of automation. This was followed by wholesale and retail – 338,000 jobs lost, 71 per cent with a high chance of automation – and professional, scientific and technical roles, which lost 269,000 jobs.

The Deloitte research is, on the whole, positive about what the development of new technologies such as robotics and AI will mean for job creation. The research also offers a number of fascinating insights regionally. The sectors with the highest levels of predicted job growth in the coming years are health and social work, education, and scientific and technical roles which add a combined 650,000 jobs. It is through these kinds of insights that targeted policy interventions can play a role in supporting people through their working lives against a backdrop of huge changes to the structure of the workforce.

The increased adoption of robotics and autonomous systems in the workplace will lead to a change in how we interact with technology at work. As we move into this period of change it is important that a realistic and constructive dialogue is maintained on the opportunities and challenges this could bring. It does not have to be the case

that technology will replace people but rather how could AI, robotics and autonomous systems free up human resources so that they can be used more productively and generate more value.

Skills and education will be crucial to ensuring the UK is able to realise the full opportunities of these technologies as well as manage potential risks. The wider education system will have a key role to play in helping and supporting people, of all ages, to be equipped with the skills needed as automation means that roles are augmented or new roles created. This also applies to those already in the workforce who will need to retrain and upskill in order to adapt and exploit the new technology-driven careers and job opportunities that will be created. Employers right across the economy, not just the tech sector, need to be responsible in helping their workforce adapt and respond to these changes.

This is where we need more radical thinking on where current drives such as the apprenticeship levy can be better focused on development throughout careers and better geared for the jobs of the future. At present, initiatives such as the levy risk a race to the bottom – a blunt policy instrument which will struggle to keep pace and provide flexibility to the most dynamic and innovative parts of the economy. Employers as never before will have a stake in lifelong learning and talent development programmes, and we need a policy environment which encourages good corporate behaviour for the period ahead.

No easy answers – but the time is now to rethink skills policy for the era of robotics and AI

The shift in the skills base and training needs is one of the biggest challenges facing policy-makers and wider industry over the next decade – whether it is creating the talent pool to support a world-leading environment for robotics

and AI, or mediating the implications of changes in the labour market brought about by new technologies.

Smart, pragmatic policy-making must look hard for new answers on how best to support people whose jobs may be vulnerable to automation or augmentation in the coming decade. This need not be a story of doom and gloom, but it does need heavy doses of evidence-based realism. Matthew Hancock MP, in his capacity as cabinet office minister, spoke regularly of the 'smarter state' – but what might the notion of the smarter welfare state look like from the perspective of the individual in this age? Better and more targeted policy-making – with smarter interventions based on new insights and projections – can enable existing workers and those entering the labour market to be better equipped with the skills to adapt and thrive in this digital age *for life*.

6 | PEOPLE ARE THE SOLUTION TO THE PRODUCTIVITY PUZZLE

Nita Clarke

Flat-lining productivity levels are holding back growth. Meanwhile, workers feel disconnected from the places in which they work and the businesses for whom they work. By giving employees a genuine voice in the workplace we can maximise our potential for growth and prosperity.

Creating a 21st century economy in the UK has never been more challenging or more important as we live through the fourth industrial revolution, with new technology, artificial intelligence, robotics and mind-blowing scientific discoveries turning our world upside down.

But we are trying to meet that challenge with one hand tied behind our back, as a consequence of the long-standing productivity gap between the UK and the other advanced economies. True, following the recession of 2008 and a long period of stagnation, before the economic shock caused by Brexit, the UK economy had finally returned to growth and is outpacing most of our European neighbours. However, despite this modest growth and a strong jobs recovery, there is growing concern over our flatlining productivity.

Productivity grew at an average of 2.9 per cent over the 30 years from 1988-2008 before slumping with the

recession. However, unlike the trend following previous downturns, productivity has stagnated for the last seven years. It remains below the peak reached in 2008 and is now 15 per cent below what we would expect had it followed the pre-crisis trend. After making up ground on fellow developed countries, the productivity gap is starting to open up again. Having almost caught up, we are now 17 per cent below the average for the rest of the G7.

Productivity is a crucial measure of the health of an economy. It is a vital determinant of wages – strong and growing productivity means employers can afford wage rises. Increasing productivity in low-wage occupations such as retail, cleaning and care will be particularly important following the introduction of the ‘national living wage’ in April 2016. It is also vital if we are to compete internationally in the so-called ‘global race’. And in the context of sharply reduced public spending, increasing productivity in the public sector is crucial to maintaining standards.

The productivity puzzle

But why has productivity stalled? Of course investment in new and effective plants, machinery and processes is vital, as is having an effective market and growth strategy. Companies trying to run their business with a mainframe computer will not match the productivity of those using the cloud. Steam driven cotton weaving looms are unlikely to match the output of the serried ranks of weaving robots on show in China. The market for a new twin-tub washing machine featuring a mangle is likely to be limited (despite the current nostalgia for all things retro).

But there is compelling evidence that what happens on a day-to-day basis in the workplace – where the rubber hits the road – is an absolutely crucial determinant of effective productivity. Put simply, too many employees

find their abilities and skills under-utilised at work; they may be working extremely hard, but ineffective business organisation and processes means much of this effort is wasted. Too many employers don't listen to their staff; just one in two employees say their manager is good at seeking their views and only one in three say they allow employees to influence decision making. Too often managers are not up to scratch and organisations fail to explain their purpose to staff, with the result that staff remain unmotivated.

Resistance to change is endemic across organisations, and many employees characterise their organisations as low trust. Very few organisations really listen to their employees and consequently have little idea about life on the ground. They too often fail to invite or follow up on employees' ideas about product or process improvement. Many employees report that their skills and abilities are under-utilised at work.

For example, a recent survey by the Smith Institute found that nine out of 10 employees said they were familiar with the term 'productivity' and think it is 'important' – but half say they are less productive than two years ago, and 68 per cent say they're working harder. Most think higher productivity results in fewer staff, less job security and harder work. Employees say that managers need to value quality and measure what's important and not just what's easiest to count. Although one in three are worried that technology will threaten their employment, eight out of 10 see technology as necessary and want to embrace it. The problem, however, is that 76 per cent say their employer doesn't consult them on introducing new technology. The majority of managers don't listen to employee suggestions to improve productivity – most think only short-term. And employees want better management and a fair deal for productivity gains – better pay, a better work-life balance, and more training

There isn't a chief financial officer in the land who would accept a situation where cash was flying out the door because a company's IT regularly performed at a third of its capacity. So it is curious that we as a country accept the fact that according to every survey, only about a third of our workforce is actively engaged at work, without recognising that solving this engagement gap could be a major contributor to improving performance, and helping to solve the productivity puzzle.

The ORC Global Perspectives survey of thousands of employees across 20 countries found the UK had the third lowest levels of engagement, 10 per cent behind the global average. A study published in 2012 by Engage for Success and endorsed by business leaders in a letter to *The Times*, suggested that if the UK was able to raise engagement levels at work up to the level of that experienced in the Netherlands, it would be worth an extra £26bn a year to UK GDP. What a waste of people's potential, what a loss of productivity and what a cost to the nation.

Enabling engagement

Employee engagement, according to the Institute of Employment Studies, is "a positive attitude held by the employee towards the organisation and its values. An engaged employee is aware of the business context, and works with colleagues to improve performance within the job for the benefit of the organisation." There are at least 50 other definitions, but whatever the formula, effective employee engagement places unleashing the commitment, enthusiasm, skills and abilities of employees at the heart of organisational success – with processes and procedures aligned to that approach, rather than getting in the way.

A report I co-authored with David MacLeod in 2008 found four key enablers of engagement in organisations; the evidence suggests that making progress

in these areas could make a substantial difference to workplace performance.

Strategic narrative

The strategic narrative is about having “a strong, transparent and explicit organisational culture which gives employees a line of sight between their job and the vision and aims of their organisation.” Employees need to find meaning and purpose in their work. They need to see how their individual graft and toil contributes to something greater, something that they can buy into and believe in. Otherwise work becomes merely contractual and transactional – you come to work and do what you’re told just because you have to.

Looking at the Workplace Employee Relations Study (WERS) – a large survey of the UK workforce – there seems to be some way to go here. Two in three employees (65 per cent) agree or strongly agree that they share the same values as their organisation. But just 16 per cent strongly agree, indicating some room for improvement.

Engaging managers

Line managers are absolutely crucial to employee engagement. The MacLeod report identified the importance of having engaging managers who “offer clarity, appreciation of employees’ effort and contribution, who treat their people as individuals and who ensure that work is organised efficiently and effectively so that employees feel they are valued, and equipped and supported to do their job.”

Again, while the headline figure from WERS is reassuring – with two thirds (64 per cent) saying that relationships with managers are good/very good – just one in five (21 per cent) believe they are very good.

Employee voice

Voice is central to employee engagement. Our report defined voice as having a situation whereby “employees’ views are sought out; they are listened to and see that their opinions count and make a difference. They speak out and challenge when appropriate. A strong sense of listening and responsiveness permeates the organisation, enabled by effective communication.”

There is evidence of a voice deficit. The European Trade Union Institute rate the UK as second bottom of the league in the EU in terms of employee participation – beaten into last place only by Lithuania. Evidence from WERS shows that just one employee in two (52 per cent) says that managers are good or very good at seeking their views. Fewer still – just one in three (32 per cent) – say that managers are good or very good at allowing employees to influence decision making.

This is a significant cause for concern. If employers are to benefit from the expertise and experience, the ideas and innovation of their employees, they need to allow and indeed encourage them to speak up.

Many of our most productive industries tend to buck the trend of low voice and low involvement. Take the automotive industry or the aerospace sector, where high levels of union membership and high levels of employee involvement go alongside incredibly high levels of productivity.

Integrity

The final enabler of engagement is integrity. This is defined as “a belief among employees that the organisation lives its values, and that espoused behavioural norms are adhered to, resulting in trust and a sense of integrity.”

Again, there is evidence of some work to do here. WERS shows that just one in two employees (50 per cent) agree/strongly agree that managers keep their promises. Only slightly more (58 per cent) agree/strongly agree that managers deal with employees honestly.

Solving the puzzle

So better employee engagement may offer part of the answer. But what can be done about it? There is a role here for employers, for employees and unions, and for government.

Employers need to think about how they engage with and involve their workforce. They need to ensure that they have a strong strategic narrative, giving employees a clear line of sight between their role and the organisation’s purpose. There need to be engaging managers who are skilled and equipped to motivate their teams. There must be a strong and robust employee voice, with people able to speak up and contribute their ideas. And there needs to be a sense of integrity, with actions and behaviours reflecting organisational values.

Trade unions can be vital actors here. Some of our most productive industries tend to buck the UK trend of low voice and low involvement. There are numerous examples of trade unions working with employers to increase productivity for the benefit of both sides; Unite’s relationship with advanced manufacturing organisations, for example, has helped make our car factories some of the most productive in the world.

Government too needs to play its part, by ensuring that the small and medium size business sector in particular has access to good management and leadership training. Organisations like the Chartered Institute of Personnel and Development (CIPD) and Chartered Management Institute (CMI) have been vocal in the need for a national network of small business support. What's more, government is also directly and indirectly a major employer itself – and placing great leadership and management alongside strong employee voice at the heart of public service delivery becomes even more important for services under pressure to provide more for less.

Labour desperately needs a narrative which tells a story of the UK and its citizens living and succeeding in the 21st century global economy. Successful organisations, working at their full capacity, with engaged employees fulfilling their capabilities, must be at the heart of our response. We need to work with all the stakeholders in the world of work to develop the solutions that will deliver a more productive economy with stronger and shared growth feeding through to better living standards and prosperity. If Labour is to regain credibility on the economy, it must identify solutions to the productivity puzzle.

7 | TOWARDS AN ECONOMY THAT WORKS FOR WOMEN

Scarlet Harris

There have been huge changes in the economy since the 1960s, and yet women are disproportionately working in flexible and low paid sectors while new jobs in the digital economy are dominated by men. And in the labour market, having children benefits men and disadvantages women. There is a need for public investment in social infrastructure, such as care and education, to help women in their working lives and boost national productivity.

A time traveller from the 1960s arriving in 2016 would be puzzled by many aspects of modern life; technological advances; automation; the decline of manufacturing; the growth of the service sector. The hapless visitor from the past would wonder where the coal mines had gone, how a steel industry could just evaporate into thin air, what on earth an online content manager or a coffee barista is, and would be perplexed by Uber, Task-Rabbit and Deliveroo. Today's labour market is barely recognisable as seismic political, social and economic changes have reshaped our industrial landscape.

But how much has really changed for women? While it is true that women's labour market participation has been steadily increasing over time and that the gender pay gap is shrinking year on year – albeit at a glacial rate – it is also true that occupational segregation by gender stubbornly

persists in the 21st century, as do workplace sexual harassment, pregnancy discrimination, unequal pay and many of the other scourges of women's working lives which would have been familiar to the 1960s observer.

Those who hoped that new industries such as green technologies and programming would create new, highly skilled jobs for women turned out to be sorely disappointed. In 1967 the author of a career guide to computer programming wrote "programming requires lots of patience, persistence and a capacity for detail and those are traits that many girls have". Perhaps unsurprisingly, there is no evidence to support the argument that girls have a natural aptitude for programming. But nor is there any evidence that boys have a natural aptitude for IT. So why is it that burgeoning technological industries are so male dominated? According to the UK Commission for Employment and Skills, women make up only about a quarter of those working in the UK's digital industries today.

As new, skilled areas of work emerge, the same old patterns of gendered occupational segregation continue to constrain women's working lives and incomes. Women's work continues to be concentrated in the old 'five Cs' (cleaning, caring, catering, cashiering, and clerical) and it continues to be defined by low pay and low status.

The creeping casualisation of the labour market has been particularly pernicious in many of the sectors where women predominate. Zero hours and short hours contracts are rife in the retail sector, while agency work and zero hours contracts abound in care work, cleaning and catering. And by 2014, there were more than 1.7 million workers reporting that they were in some kind of temporary work. The number of women in temporary work rose from 773,000 at the start of 2008 to 892,000 by the end of 2014 and the proportion of women in temporary work because they could not find a permanent job increased from a quarter to nearly a third.

The same story

When the TUC conducted interviews with women on various forms of casual contract in 2014, some clear themes emerged: increased risk of pregnancy and maternity discrimination; problems managing childcare and other caring responsibilities because of unpredictable and fluctuating hours; low and fluctuating pay and the impact this has on in-work benefits; lack of training or other opportunities to progress; and problems asserting workplace rights through fear of losing work or having hours cut. One woman university lecturer on a fixed term contract who was interviewed by the TUC reported that she was not given supervision of students, which is a prerequisite for career development in her field. She was told that this would not be fair on the students because she would be “out of here in a few years”. Several women reported that they felt that their casualised contracts meant they were seen as “dispensable” and not someone to invest in.

One woman working on a short hours contract in retail reported that the cost of her travel to and from the shop cancelled out her earnings from the shift. Another woman, a further education college tutor, recounted how she was working full-time hours for part-time pay and that all of the women with children had been gradually forced out of the workplace. “All my colleagues in the department that I work in are either men or women who do not have children. I am the last mother standing!” she said. This astute observation highlights an uncomfortable but unavoidable truth: women’s role as the primary carer in the majority of households is still as central to our working lives as it was for women in the 1960s.

Earlier this year, the Equality and Human Rights Commission found that over three quarters of pregnant women and women on maternity leave experience

negative and potentially discriminatory treatment at work. That's the equivalent of 390,000 women in Britain each year. While some of that discrimination takes place during pregnancy – ranging from women being forced out of their jobs, demoted, made to work in unsafe environments, to women being harassed and bullied because of their pregnancy – much of it takes place upon return to work. The challenges of balancing work with the needs of young children still seems to be perceived by many – not least discriminatory employers who prefer not to employ women of childbearing age – as a problem for women to solve alone, rather than a problem for fathers too.

A toxic combination of discrimination against women during pregnancy and maternity leave, unaffordable child-care, a lack of quality, well-paid part-time work, employers who refuse to countenance requests for flexible working, and social norms which still expect men to be breadwinners and women to be primary care givers – all mitigate against women's earnings and labour market participation. Furthermore, the effects are long-lived. Women who take prolonged breaks from the labour market after having children are less likely to get back into work at the same skill and pay level as before. One in six women change jobs after having a child and for the majority of those, this is because they could not access part-time work or hours to suit their needs in their previous job. Women who seek part time work to fit in with caring responsibilities often find their earnings decrease far more steeply than their working hours. Recent analysis by the Joseph Rowntree Foundation and the Timewise Foundation found that for every part-time job vacancy which paid £20,000 pro rata, there were 18 full-time vacancies. While progress has been made in closing the full time gender pay gap, the part time pay gap remains alarmingly wide. Women are more likely to work part-time than men across all age groups and the proportion of women who work part-time rises steadily

with age and peaks for women over the age of 50. Women working full-time now earn about 9 per cent less per hour than men but women working part-time earn nearly 38 per cent less.

Earlier this year the TUC commissioned research into the motherhood pay penalty. The analysis found that by the age of 42, mothers who are in full-time work are earning 11 per cent less than full-time women without children. Interestingly, while women who have children earn less, men who have children earn more. Fathers who work full-time experience, on average, a 21 per cent 'fatherhood wage bonus' and fathers with two children earn more (9 per cent) than those with just one. For the cohort of full-time workers who were born in 1970 there was an overall gender pay gap of 34 per cent, which can be explained by women earning less and men earning more after having children.

Shifting the status quo

So if women's working lives are still as constrained by caring responsibilities, discrimination and deeply entrenched occupational segregation as ever, what hope can there be of ever achieving change? I hope that our time travelling observer from the 1960s would not come to the conclusion that it is futile to attempt to change. Rather I hope they would conclude that we simply have not done enough to bring about real change for women.

Too often debates about the labour market, investment, skills and the economy fail to acknowledge the multiple ways in which women are excluded. If we want to see labour market changes which actually benefit women, rather than increasing marketisation, outsourcing, and casualisation – all of which we know to be particularly problematic for women workers – then we need to start with a gendered analysis of what our changing labour market and working practices mean for women. We need

to challenge the misrepresentation of new, precarious forms of work as being 'flexible' or 'agile' and to recognise that in many cases all of the flexibility and the power resides with the employer, not the worker.

We also need to consider our working culture and our social norms relating to gender roles in the family and the workplace. A culture that demands that men sacrifice being involved in family life and women sacrifice their jobs and economic independence is not good for anyone. Long working hours, low pay, and lack of job security mitigate against that holy grail of work-life balance for both men and women.

None of this is inevitable. Just because the problems facing women in the labour market are deeply entrenched does not mean that they are intractable. The Women's Budget Group has set out a vision for a feminist plan for a caring economy. Rather than simply focus investment in capital infrastructure projects and new burgeoning areas of the economy such as new technologies – without ever considering how to open up these sectors to women – the Women's Budget Group calls for investment in "social infrastructure". That is to say care, health, education and training services, social security and housing. Investment in social infrastructure would benefit women's working lives as well as national productivity. Recent analysis by the Women's Budget Group for the International Trades Union Congress found that by investing 2 per cent of GDP in care industries, up to 1.5 million jobs could be created in the UK, compared to 750,000 jobs for an equivalent investment in construction. This 2 per cent of GDP investment in public services would create almost as many jobs for men as investing in construction industries but would create up to four times as many jobs for women.

So, while we also need greater investment in capital infrastructure projects, we must not overlook the fact that investing in the public sector, and specifically in publicly

funded and provided care for children, for people with illnesses and disabilities, as well as for frail elderly people, would have a significant impact on women's labour market participation, women's earnings, productivity, and on the wellbeing of all of those who depend on care – lest we forget, there is every chance that each of us will need to be cared for at some point in our lives.

A low wage, casualised, and privatised economy may be the status quo but it is not inevitable. We arrived here through political decisions and it is only by challenging those political decisions that we will ever build an economy that truly works for women.

8 | A COLLECTIVE VOICE IN AN INSECURE WORLD

John Park

Trade unions must adapt to survive. As the world around them has rapidly changed, there is an impression they have remained stuck in the past with antagonistic rhetoric, outdated governance structures and an inflexible approach. Yet trade unions remain as vital as ever in an insecure jobs market, and do have the capacity to protect workers and inspire support when they use positivity in place of hostility. To continue to do so in our changing world, unions should seek to form partnerships with employers and government.

Early summer 2016 will be noted as one of the most politically volatile periods in the UK's economic and political history. In uncertain times such as these, we need a coherent voice for workers, ensuring their concerns are at the forefront of the discourse regarding the future of the country. When we honestly and self-critically consider where we are today, we must accept that while some voices are being heard – most notably those of junior doctors, steelworkers and teachers – these are in the main reactive to particular circumstances in their respective sectors. The failure of the Labour case for the European Union to cut through in the referendum debate only serves to highlight the lack of pro-active voices seeking to shape the UK from a workplace perspective. But the lack of a trade union

voice is a problem that goes beyond the debate about how to deal with Brexit.

The future of the UK trade union movement is at risk – trade union membership has been stagnating for the last 30 years and structural changes in the UK economy have led to trade union density in the private sector dropping below 14 per cent. Most European countries have witnessed a similar trend, although the levels of trade union density in most of the Scandinavian countries are still two to three times that of their central and southern European neighbours.

The most worrying aspect of this decline is that – despite work being increasingly less secure, salaries at the top racing away from those at the bottom and workers' rights being slowly rolled back since 2010 – trade unions, or more precisely trade union membership, appears not to be a relevant choice for millions of workers.

The issues that gave rise to the creation of trade unions – improving job security, the emancipation of industrial workers with new skills, and the ability to bargain with employers to ensure a more equitable share of rewards – are as desirable today as they were 150 years ago. Indeed, because many private sector employers are finding more ingenious ways of not sharing profits equitably across the workforce, it should be easy to argue that the promotion of trade union membership is a sound economic policy choice for any government.

The future of work and the trade union response

The future of work is difficult to predict but there are some changes we can anticipate. The exponential nature of change in this second machine age might not see all of the jobs we do now replaced by robots or driverless cars, but it will disrupt the way we work even more than the transition to the first machine age did. We are set to see an

explosion in self-employed and freelance workers and the digital revolution will lead to many jobs becoming obsolete. The 'gig economy' is growing, with work based on short-term arrangements, casual workers and independent contractors. Policy and decision makers are thinking through their responses to these changes and trade unions must seek ways to influence this debate.

For many, this pattern of work is a reality now. Some make a conscious choice but growing numbers have fewer options as traditional jobs in the manufacturing supply chain continue to be lost. For example, many members of my trade union, Community, made redundant from the steel industry in recent months have been encouraged by agencies, brought into mitigate job losses, to think about starting or growing a business, or becoming a freelance or lifestyle worker. In addition, younger people attracted to creative industries find themselves working for companies who use similar business models to Amazon, Microsoft and Uber which rely on individuals renting out their skills and possessions online in the shared economy.

This is a massive challenge. Even if trade unions start to map out our policy and structural response now, inertia in our movement may lead to us never being in a position to support these workers effectively and, arguably more importantly, to ensure that their voices are heard in the policy discussion around the future of work.

Of course it isn't only about the challenges presented by the gig economy – we'll need to recruit and organise members from emerging industries whilst consolidating in our traditional sectors. Achieving these twin objectives will take levels of innovation not seen in the UK trade union movement for many years, if at all.

The role trade unions have played in recent years in driving up productivity and ensuring that trade union members are equipped to participate in workplace change is also diminishing. Research recently published by the

Smith Institute highlights that only 18 per cent of employees think that their trade union is engaged with workplace productivity. Trade unions should be seen as a key partner in turning around the UK's stagnant productivity levels. A long-term strategy which seeks to build capacity within unions to engage on these issues would not only help improve productivity, it could increase trade union workplace activism and positively influence industrial policy development more widely.

Can we provide a solution?

The reputation of trade unions is vital to our continued success. If we are seen as a negative force or a voice of the past, then it will be almost impossible for us to connect with the workforce of the future. Indeed there is clear evidence that our reputation isn't as strong as it has been in the past or should be today. Some will blame the 'Tory press' or the culture of individualism that supposedly dominates our post-Thatcher culture, but if we are really serious about improving the standing of trade unions surely responsibility lies with our leaders?

We've contributed to this situation, particularly in our use of language. More concerning than the trade union terminology many of our non-activists struggle to understand is our tone of voice and our confrontational language. Recent research carried out on behalf of Unions 21 highlighted that the words used by trade unions have become more extreme over a 20 year period – where unions used to be angry, now they're furious. Consequently, trade unions tend to hit the headlines only when there is some form of industrial dispute or power struggle within the Labour party.

We do not talk openly enough about our successes. We shouldn't be embarrassed when we make something happen whilst working in partnership with decent

employers. Nor should we shy away from championing successes achieved through industrial strength, but we need to be more sensitive to how we frame this to a wider audience.

The junior doctors dispute demonstrated that if you have a sound organisational reputation then public support is much easier to foster (although it remains to be seen how long that can be sustained). The constructive approach taken by the trade unions in dealing with the crisis in the steel industry is another positive example, where the trade unions are viewed not only as the workforce representatives but also as an important part of the industry. Indeed, Community commissioned polling from YouGov which showed there had been a 16 per cent increase in the number of people who viewed trade unions positively since the beginning of the steel crisis.

Our reputation does matter, because ultimately most people make decisions to join organisations based on what they think about them. Other recent polling from YouGov highlighted that just 19 per cent of workers would be likely or very likely to seek assistance from a trade union if they had a problem at work. Amazingly this figure jumped up to 64 per cent when the question was phrased as 'paying for independent help and advice' for assistance with a problem at work – the very thing trade unions provide. The other most notable figure in this polling was that 30 per cent of those questioned were trade union members; our reputational problem isn't confined to non-members.

The importance of trade union governance to our future relevance

Changes to trade union legislation tends be something that is done to trade unions not with them. Normally, it's Conservative governments seeking to reduce trade union

influence in some way. This government's Trade Union Act is the most recent example of that approach and whilst Frances O'Grady and her colleagues at the TUC worked tirelessly to gain a number of concessions, trade unions are still on the back foot because of these measures.

Undoubtedly this government or a future Conservative government will seek to return to some of these measures in the future – probably after public opinion has shifted away from support for unions due to a prolonged dispute or high profile public sector strike – so why don't we take the initiative?

It shouldn't be beyond the collective wit of trade unions to seek to develop and modernise our own structures, develop ideas that would underpin our future independence and seek out best practice across the movement in the delivery of services and benefits.

Indeed, the efforts to introduce electronic balloting into the discussions around the trade union bill are a fine example of trade unions thinking differently. It is unfortunate that they were only given serious consideration due to the passage of the trade union bill through Westminster.

So why wouldn't we want to modernise and review our democratic structures? It's hard to measure workplace-level engagement accurately but it is clear that in the big ticket elections for general secretaries and executives, the turnout figures are woeful. There must be a more effective way of engaging trade union members in the decision making process of their union.

General secretaries being elected on tiny turnouts who are then accountable to executives elected on even smaller turnouts, is not good for decision making. It encourages a leadership approach which only seeks to address the concerns of small, often factional, groups as opposed to the wider interests of union members. This is less of a problem in smaller and more specialised unions because their scale naturally enables decision-making to be made closer to

members. But it is a problem in larger unions, a fact I am sure many senior officials would acknowledge privately.

Getting members to participate in general secretary or executive ballots might always be a problem but new statutory structures for executives would enhance and modernise trade union governance, for example setting limits on the size of executives and involving independently appointed trustees in decision-making.

The way ahead

We live in a significantly better society than did those who founded and established the trade union movement. Nevertheless, in many ways the world of work is just as insecure and precarious as it was then. Certainly, the need for a strong, responsible collective voice in that world has never been greater. And for those reasons, we can't allow UK trade unionism just to be a story of managing a long decline. For those workers who need us most, it has to be a story of recognition, recovery and relevance.

Firstly, we need to recognise the severity of the situation that we are in and face up to the facts of declining membership, relevance and authority. There needs to be an acceptance that it is the responsibility of the trade union movement to understand the problems we face and to address them – not to blame others such as the press, politicians or employers.

Secondly, we need to build a consensus across the trade union movement on a recovery strategy. Given the diverse interests of our many sister organisations, that is easier to say than to deliver on. Strengthening the governance of trade unions should be one priority, seeking to develop a tripartite social framework with employers and government should be another.

Continuing and increasing relevance of trade unions to the world of work is the final aspect we must address

quickly. We must recognise that we are struggling to connect beyond our membership and in many cases even beyond our activist base.

We need to speak in a way that engages people – we can be positive, passionate and persuasive – and still sound normal.

Our benefits and services must be responsive to the needs of workers today and be flexible enough for change when it comes. How these services are delivered is equally important – accessibility and core benefits such as representation, legal support and health and safety will always be relevant across most workplaces but what other kind of support will a worker in 2020 need? What are the new risks for workers in the sharing economy? And can trade unions develop their own ethical platforms in partnership with cooperatives to deliver services and employment opportunities to members?

These are undoubtedly big challenges for the trade union movement. I know we want to help build a fairer, more equitable society with decent jobs, housing and education. Wanting to do these things isn't enough, we need to be in a position to make change happen.

9 | SOCIAL DEMOCRATIC CO-OPERATION IN THE DIGITAL AGE

Jutta Steinruck

The UK is leaving the EU but not Europe. The challenges that the changing world of work pose to social democrats are European and global in character – national fixes won't do. The quantitative and qualitative changes happening to jobs, and their social impact, have to be analysed in order to adapt existing social standards to the new forms of employment.

Looking at the world of work from a European level, it is clear that many of the challenges faced by the UK are the same challenges faced by nations across the continent. The UK can learn from the European approach.

Across Europe, as in the UK, technological advances have reshaped the way we work and new employment models have introduced new forms of work. The development from manufacturing to service jobs continues across Europe while public sector jobs are increasingly being replaced by the private sector. Currently many European social democrats are focusing on the digital agenda, but it is important we take into account all of the new forms of work, not just digital jobs. We need a new framework for this epochal transformation. It needs to ensure we all stand to benefit from these changes, and it needs to minimise the risks, particularly to our social security systems and safety at work.

The quantitative and qualitative changes happening to jobs, and their social impact, have to be analysed in order to adapt existing social standards to the new forms of employment. Globalisation and the continued disruption technology brings have already begun shaping and creating the jobs of the future. A generation of new business models and new jobs, especially for high-skilled but also for low-skilled workers, is taking shape across the continent. But due to automation processes, other jobs will disappear completely, especially in the medium-skilled labour sector.

This increase in atypical and flexible employment relationships could also lead to a decrease in labour rights and salaries. There has to be modernisation of social and employment legislation to maintain existing standards of social security, minimum wages, worker voice, and occupational health and safety in the workplace in order to stay abreast of changes in the new working world. Policy makers across Europe have to ensure that employment and social policies keep pace with digital innovation and entrepreneurship in order that we all profit from the opportunities and manage the potential risks which could be associated with it. And Britain too must ensure that these opportunities and protections are maintained as it departs from the European Union.

Future implications for workers

Without doubt, the changes in the world of work will have profound implications for the workforces of tomorrow right across Europe. It is important to identify the specific difficulties which workers will face in the future and how European cooperation can be a help, not a hindrance.

Self-employment

The first issue is the rise of self-employment and bogus self-employment. As a result of the trend towards outsourcing, more and more people are going to become self-employed. Therefore, policy makers and social partners alike should develop strategies to ensure that all workers have appropriate rights under labour laws, regardless of their existing contracts, including the right of collective bargaining.

A clear European definition of self-employment would also help to prevent the spread of bogus or false self-employment, when employment is disguised as self-employment in order to evade taxes and employment rights. European countries need to work together to map out the various forms of self-employment. Bogus self-employment with the goal of undermining existing labour and social security standards must be prosecuted. The newly established European platform on undeclared work provides the ideal medium to take this task on.

Similarly, new working practices like crowdsourcing are expected to lead to further growth in levels of self-employment. Competition for job opportunities on these crowdsourcing platforms is global, implying a competitive advantage for bidders from areas with a low cost of living, low income tax rates and low levels of social security cover. Policy makers should therefore strive to provide adequate information to workers on working conditions and workers' rights throughout crowdsourcing platforms. Additionally, it is the responsibility of social partners at a national level, as well as governments, to find the solutions that guarantee a fair and inclusive labour market, regardless of specific employment arrangements. Again, Britain can learn from EU countries here – and vice versa.

The importance of skills and education

Secondly, to ensure that the education system fits the future developments in the workplace it is necessary to identify inadequacies in the current system, and then to establish where the current skills gaps lie. Here too, individual initiatives along national lines make little sense.

As jobs and skills profiles become more complex, new demands – especially information and communications technology (ICT) skills – are being included in on-the-job training, as well as in further education. It is a tremendous challenge to redesign our educational systems, training curricula and work methods in a holistic way that responds to the challenges and opportunities of the digital revolution. The aim must be to promote digital literacy and to tackle the existing gender and generational gaps. The social partners and various educational training institutions will have to update course content and develop skills strategies linking the world of education to the world of work.

This new education system should set a standard for workers of all ages across Europe in the new economy. In order to achieve this, we will need to establish new funding opportunities for this education and training, especially for micro and small enterprises. Governments should make appropriations from all possible funds available to employers, so that they can invest more in the digital training of their less qualified staff, or recruit low-qualified staff with the promise of further training financed from these sources. There are also examples of some European countries introducing rights which guarantee workers a minimum level of entitlements – such as paid educational leave – as a measure to improve workers' access to education and training.

The role of the state

The changing world of work will also influence the agenda of national governments across Europe. The state is responsible for ensuring that social security systems are effective, and for adapting them to support people in the jobs of the future. Given that there will be an increasing number of self-employed and precarious workers, the state has to find new forms of social security which are accessible and tailored for those workers.

This is because the state has a responsibility to ensure that the wellbeing of the worker is at the centre of digitalisation. This means that technological change and new forms of employment will be able to bring benefits to workers and the economy. Where there are disadvantages for working people, there has to be a legal framework to protect them in order to avoid an increase of those classified as working-poor. A society based on social sustainability needs people who can live from the money they earn, spend it, and pay into the social security systems.

Conclusion – looking forward in uncertain times

The changing world of work and its impact on the jobs and tasks all of us do will not stop at any border. In the years to come, the challenge across Europe will be to develop a common agenda on work, which includes the twin pillars of employment and social issues. It is clear that European countries cannot win in a race to the bottom against their competitors; they have to compete on quality. And in order to deliver quality, Europe needs a high-skilled work force, motivated workers and an environment that encourages innovation.

Digitalisation is like a bespoke piece of clothing that has to suit two people: the employee and the employer. It is not possible to develop the labour market in a sustainable

way if the workers and their working conditions are disregarded. Instead, it must be ensured that labour standards are maintained in spite of the disruptive forces at work in our labour markets.

10 | CONFRONTING 'INSECURITY CUBED'

Anthony Painter

Technological change, an increasingly flexible labour market and an intrusive welfare state have combined to create a new state of insecurity. To contend with this, a new social contract is needed. The cornerstone of this should be a basic income: an unconditional guaranteed income to all adults and children, in order to underpin economic security.

The job is changing. This is not just a case of new types of work replacing others – a trend seen relentlessly since the industrial revolution. Something more profound is taking place. The nature of the 'job' itself is changing. It is going through a transformation as great as the changes seen to the family since the 1960s, to the nature of old age as the Baby Boomers hit retirement, or the construction of identity now adolescents socialise as much online as off. Much has been said about the decay of other institutions – the church, trade unions, and the industrial age firm. But the transformation of the 'job' is perhaps one of the most significant societal changes seen in half a century. This is serious and it impacts the weakest more than others. In other words, it is something that social democrats should be taking very seriously indeed.

There is no greater political consensus than that around the mantra that 'work is the best form of welfare'. We

might even call this a Blair-Brown-Cameron-(May?) consensus. Welfare policy has been constructed on precisely this basis for two decades or more. We celebrate record employment rates and applaud the role of tax credits, low labour market regulation, the minimum wage and conditional welfare in achieving them.

However, caution is required because a more complex picture emerges on closer inspection. This picture is related to the changing form of the 'job'. Essentially, work has been decoupled from a single job. The economy has shifted from a picture of full-time, stable and predominantly male employment to a picture that is more mixed but contains a much greater number of part-time, insecure, flexible jobs. Many have undoubtedly benefited from this change. Many more women are now in employment and those with marketable skills are able to navigate more flexible labour markets to their advantage (often through high value self-employment). Overall employment has increased. Yet here too, if we look underneath the bonnet a more concerning picture emerges.

Since 2007 almost all the aggregate increase in employment in the UK is accounted for by 'non-standard jobs', according to the Organisation for Economic Cooperation and Development (OECD). These include low-pay self-employment, 'flexible' and zero-hours contracts and part-time work. The RSA's Ben Delloit has suggested that self-employment could overtake public sector employment later in this decade or early in the next. The rapidly growing 'gig economy' offers new opportunities for some but insecurity and low-pay for others. Data from the University of Hertfordshire suggests that over 10 per cent of UK workers have done some work via so-called sharing economy platforms (Uber, Upwork, Handy); 3 per cent on a weekly basis. When we consider how far these platforms have yet to spread this is already significant and is highly likely to become more so rapidly.

What is the outcome of the deconstruction of the traditional job? The answer for many is insecurity and volatility. The latest British Social Attitudes survey is instructive. In 2005, the most stressed at work were managers and professionals at almost 40 per cent. They are still the most stressed in 2015 at a little over 40 per cent. What is remarkable, however, is the increase in stress amongst 'semi-routine and routine' occupations. Those in these groups experiencing stress at work have increased from just under 20 per cent to just under 40 per cent in a decade. They have low paid work with high pay stress.

In the same survey, 92 per cent consider security to be important in work but only 65 per cent feel their job is secure (71 per cent of workers do think they have a good job but clearly underlying insecurity sits alongside that). In corollary, the Office of National Statistics (ONS) Annual Population Survey for 2015 finds medium or high anxiety levels amongst over 30 per cent of the population.

So this range of fundamental changes to the 'job' would appear to have had a very significant effect on spreading insecurity. This is the first dimension of what we might call 'insecurity cubed': the tripartite combination of job insecurity, insecurity caused by the welfare state, and that caused by technological change. The second dimension, the increasingly punitive and intrusive welfare state, now sits alongside this world of insecure work and anxious lives for at least a third of the population. Of this, Professor Paul Spicker of Robert Gordon University has concluded:

"If we look at what pushing people into work has done, it hasn't led to a reduction in poverty. It has led to an increase in the proportion of people who are working on low incomes."

Work is not, as much of the political discourse might have it, the solution to poverty; in-work poverty is, if

anything, getting worse. Alongside the spread of insecurity, there is the edifice of the modern welfare state which has become ever more intrusive as it compounds an entirely arbitrary sanctioning regime with moves into in-work conditionality and work penalties – often 70-80 per cent of each additional pound earned as tax credits are withdrawn. None of this has rebuilt faith in the welfare state; in fact, it has undermined it as those trapped in low or no pay cycles are seen as an ‘undeserving’ other.

According to the UK Statistics Authority, 18 per cent of jobseeker’s allowance claimants received at least one sanction in 2013–14 (which rises to 22 per cent for the whole 2010–14 period). By contrast, there were just 220 convictions for tax evasion in 2014 – which itself was an increase of 29 per cent on the previous year. That shows our societal priorities. It is little wonder then that the Trussell Trust handed out over one million three-day food parcels in 2015–16. The main causes of such a demand for foodbanks were delays in benefit payments, changes to benefits and low income – other associated causes such as debt and homelessness were prominent causes too.

So the story of the two decades has been a story of emerging insecurities in the labour market and welfare state, but there is a third factor: technological change. There are many predictions about the impact of intelligent machines on the world of work. The best guide in these situations has to be the past; previous technological leaps have created more new (and better) work opportunities than they have destroyed. However, these changes have hit particular groups of workers and communities hard and sometimes for considerable lengths of time.

Once machine capability is greater than human skill levels in a particular domain then it is simply a matter of waiting for capital investment to flow into that technology before workers become redundant and whole categories of work obsolete. There are undoubtedly a range of

technological innovations in automation, artificial intelligence, smart robotics, big data and algorithmic analysis coming on stream. At the very least, we should be alert to the possibility that these could have a significant negative impact on whole categories of worker (whilst empowering others) and that these impacts could be more sudden or intensive than historical scenarios might suggest.

These three dimensions of insecurity – a changing labour market, technological innovation and an intrusive welfare state – all suggest that a very different social contract is now required. Firstly, the tax and benefits system needs fundamental reform. The cornerstone of this new social contract should be a basic income. In essence, this means every adult and child being given a weekly unconditional payment.

For this, there are lots of different models. However, models proposed by the RSA, Compass and the Citizen's Income Trust (CIT) all protect work incentives, are affordable in historical terms, and are more progressive than the current system of taxes and benefits overall. None of these models propose replacing housing, disability or child care support. The CIT and Compass models could be used to transition to a more radical system that removes tax credits altogether, as the RSA model proposes – this could help ensure that any potential losers compared with the current tax and benefits system would have the necessary help as the system transitions over time.

In essence, a basic income is an intervention designed to underpin economic security. It gives people a greater possibility to pursue better work, try setting up a business, reskill, or undertake caring responsibilities without having to answer to the Department for Work and Pensions. There is no need to leap straight to a basic income. The Netherlands, Finland, and Canada are experimenting with the system to ensure that it is designed well; we can learn from them.

Basic income alone is of course not sufficient. There will still need to be help into work but it will have to be higher quality, better tailored and targeted to encourage those who need support to engage. There will need to be greater support for particular groups of workers such as the low paid self-employed by, for example, supporting cash flow through government supported co-operatives and peer-to-peer social enterprises. The RSA's Brhmie Balaram has proposed a system of shared regulation involving gig workers, consumers, and new sharing platforms to ensure powers are balanced. With new powers, cities and other devolved areas will have to plan creatively to offer new routes to work and training for those locked in a low pay-no pay dynamic (up to a third of all workers currently).

Rightful concerns over inequality have occupied the concerns of the centre-left for some time. Those concerns should not be diluted. However, alongside that concern there must be a much greater focus on the deleterious impacts of insecurity associated with the decline of the traditional job. If the needs of all are to be accounted for then there needs to be a shift in Labour's thinking. It needs an agenda for insecurity cubed; that agenda has a basic income at its core.

11 | THE ROLE OF THE STATE IN THE UBER ECONOMY

Anna Turley

The pressures of a global economy have brought with them huge opportunities but also great disruption. As a result, people feel insecure and bereft. The state should take a pro-active, empowering role and form an industrial strategy that can harness the potential of the digital revolution in the towns and cities that have lost out by supporting new growth industries and programmes of education and skills.

The technology-driven change that is reforming the world we live in opens up exciting possibilities to improve the way we live and work – creating new industries, new kinds of work, and bringing down social barriers. However, it also poses real challenges, particularly in the transition period as the status quo in many areas of our society is swept away. The ‘job for life’ is now rare, replaced with less secure work and more self-employment. The next generation of automation could soon see more jobs replaced by robots. For policymakers this means grasping for new means to manage the resulting economic and social change and smooth out the process. For those of us on the centre left of politics, this task is even greater as our commitment to working for an equal and just world faces new frontiers. The need for progressive policies, which ensure the gains from the technology revolution are

shared and those who lose out protected, is greater than ever before.

It is often said that globalisation diminishes the power of the state and renders the traditional levers available to governments less effective. For the political right, this conforms with a deeply held belief that markets work best without state intervention. My constituency, Redcar, was at the sharp end of this attitude to government intervention when our steelworks closed in 2015 under pressure from cheap Chinese imports flooding the market. The Conservative government opted for a hard closure instead of helping the business weather the storm. This outlook will serve our economy poorly in the coming years. Instead we need to see an 'empowering state' which supports people through technological upheaval and ensures the many, not just the few, benefit from the rewards of the second machine age.

What does this technological change mean for industrial towns?

In the past half century, the shape of the economy has changed immensely, with huge consequences for the industrial fabric of Britain. Redcar and the wider sub region of Teesside were built to supply labour to our major industries – the steelworks, the port, and the chemical plant at Wilton. In its heyday the steelworks would have employed 40,000, Smiths Dock would have hosted 5,000 men building ships, and the ICI site 30,000. The chemical site is now a quarter of its size, the docks built their last ship in 1987, and the steelworks closed for good last year with a loss of 3,000 jobs. Globalisation has made its mark on northern industrial towns like Redcar, as the drivers of Britain's economy have become the service sector and financial services. For people in Teesside, this has meant many of the new jobs created are less secure and lower

paid, in sectors like retail, hospitality, and customer service. Industry and manufacturing enterprises continue to grow but on a much smaller scale than in the past.

As technological innovation brings about a new wave of change, our labour market will look very different again. In the budget this year the chancellor set the wheels in motion for driverless cars and lorries. It's now conceivable that the coming years could see transport and haulage gradually replaced by automated vehicles, which, whilst potentially improving road safety, would also mean a significant reduction in jobs. Drones too could deliver our internet orders quickly and cheaply, reducing the need for postal workers.

The consultancy firm Deloitte has estimated that within the next decade as many as 11 million jobs could be automated, a phenomenon that Richard and Daniel Susskind suggest will affect the professions as much as skilled and unskilled work. Some tasks in the realm of finance and legal industries are already being computerised and further technological development could see more jobs in these areas disappear.

In the digital sector, iTunes and Spotify have changed the music business whilst apps like Whatsapp and Skype have transformed the telecommunications market. New start-ups like Uber and Airbnb are changing the way their own established markets work. Innovations like these are breaking down barriers and creating more flexible services for public benefit, but at the same time they pose new challenges, especially for those whose livelihoods depend on the status quo.

The state's response

The challenge for progressives is ensuring the state protects those who are vulnerable to this change and to empower them so that they too can benefit. Social protections need

to be adaptive enough to suit the flexibility of the modern labour market; and public services, particularly education, need to be forward looking to meet the new needs of the economy. For towns like Redcar, it also means government needs to play an active role supporting and investing in high growth industries to replace the jobs we have lost.

Social protection

In his essay, Anthony Painter has made a persuasive case for new forms of social protection to give more security to workers in an insecure world. With the prospect of more low paid and insecure work, there is a clear need for intervention to ensure living standards are maintained for those at the bottom end of the labour market. Self-employment in particular has seen an unprecedented increase to 15 per cent of the total workforce. Whilst pay is one of the challenges for these workers, it is not the whole story – the absence of employment rights and HR support must also be addressed.

Self-employed people bear the full costs of the job including things like office space, employment insurance, pension savings and national insurance admin. They also have a greater burden of risk and do not have the same secure terms and conditions as employees of organisations. As a Labour and Co-operative MP, one response I have been encouraged by is the formation of co-operatives among self-employed workers. For example, the Federation of Entertainment Unions, a network of trade unions for those working in the UK media, has successfully negotiated for their freelance members by securing 'worker status'. In Swindon, 50 music teachers formed a co-op in order to market their services collectively. Meanwhile, in France and Belgium, co-operatives are providing services like affordable workspace and back office support for their members. In an uncertain world, new collaborative institutions will allow people to enjoy the

flexibility of working alone but with greater security. We must do all we can to help promote and develop similar solutions so that people are not prevented from living a fulfilling life.

Education and skills

Education is one of the strongest tools progressives have to tackle inequality and create opportunity. It should play a key role in the state's response to the technological revolution as old skills become obsolete and new ones are needed. Despite governments focusing on investment in education, the existence of a skills gap is a growing problem. The European Commission has estimated that by 2020 there will be 1 million jobs unfilled because we do not have the workers equipped to do them. In Teesside, a focus on reskilling is at the heart of our local response to the challenge of regenerating our local economy. The taskforce set up to respond to the closure of the steelworks has collaborated with local colleges to retrain former steelworkers. Adult retraining opportunities like this need to be available more broadly so that people can make the transition into new work.

We also need to equip our young people who are still in education for the jobs our economy needs. In my area, training providers like NETA and TTE are educating a new wave of electricians, engineers and technicians. We need a national drive to ensure vocational opportunities like these are available to all young people. Equally, as digitisation is giving greater primacy to new computer-based skills, the language of computer programming must become mainstream in our schools. We need to train a new generation of coders to develop the next 'Candy Crush' or marketers to experiment with new media. With the dominance of large employers waning, we also need our schools to encourage entrepreneurialism, to give our young people

the confidence to take a leap and become the next Steve Jobs or James Dyson. The state has an incredibly important role to play in educating our nation for a new era.

Industrial strategy

An active industrial strategy is even more of a necessity to take advantage of further technological development. If the laissez faire attitude of the current government continues, leaving the health of British industry to the whims of the market, the transition will be a difficult one and opportunities for growth will be missed. We need the state to promote innovation and entrepreneurship, invest in infrastructure like high speed broadband, and support the growth of businesses in employment creating sectors. Progressives need to ensure that technological change produces the good jobs that we need.

On the continent, Germany has specialised in high end manufacturing and has adopted a relentless drive to deliver products at the cutting edge of modern engineering. Free market ideology regards the state as an impediment to the market but the German experience shows how a proactive and innovative state can support the advancement of industry within the market structure. Even now Germany is focused on the world of tomorrow with the 'Industrie 4.0' initiative, which is preparing their industry for the digital revolution. They also have constructive trade union relationships and worker representation on boards, giving the workforce a stake in advancing the economy. This contrasts hugely with the UK, where government is still reluctant to take robust action on issues like energy costs and uncompetitive business rates which are holding our industries back. If we do not catch up, the UK will cede further ground to our competitors and miss out on the dividends.

On Teesside we have been calling for government action on two key projects in particular. Tees Collective is

a partnership of a number of our local industrial producers who want to establish Europe's first Carbon Capture and Storage (CCS) equipped industrial zone. This project would put Teesside companies at the forefront of the low carbon economy and continue to build on our strengths. Another initiative is being led by the Teesside-based Materials Processing Institute (MPI) to become an industrial materials 'Catapult' – part of a network of innovation centres, which through research and development, are helping the UK pioneer new industrial technologies. There has already been international interest from Sweden and Germany in MPI's work. On a more micro level, ex-steelworkers have been able to apply for a business support grant of £10,000 through the local LEP to kick-start their own enterprises. Start-up funding and advice need to be much more widespread if we are to empower people to become entrepreneurs. Business finance and taxation in general need improving so that high growth sectors are not held back.

Conclusion

Technological change is already beginning to transform our world, changing the way we live and work. The challenge for progressives is to find ways of managing the disruption so that all parts of our society can benefit. As my colleague Tom Watson MP has argued, the question is how we make this transformative process our friend and not our foe.

In industrial towns like my own of Redcar, the pressures of the global economy have already brought about massive change and it is understandable that people feel insecure and bereft. We need a pro-active, empowering state to ensure places like Teesside can harness the new jobs and services that the digital revolution will bring. An active industrial strategy is more important than ever to

support the new growth industries and bring new jobs to replace the old. Investment in education and skills, both for our young people and adults who need to reskill, is a necessity if we are to fill those new jobs. And new collaborative institutions are needed to provide security for workers in more flexible employment.

The challenges are great but the opportunities are greater. A proactive state can ensure the rewards reach the many, and not just the few.

12 | THE FUTURE OF WORK OUTSIDE THE EU

Margaret Prosser

The decision of the British people to leave the European Union came as a shock and disappointment to many on the left. But while creating serious difficulties, it also offers us the opportunity to reboot our politics and reshape our economy. The left should resist Conservative attempts to see it as a validation of their free market approach. Instead, the rights of the social chapter should be guaranteed, while we look to new opportunities outside of the EU.

The vote to break away from the EU came as a shock to many – including some who campaigned for that result. Disappointed as many of us on the centre-left were, this is an opportunity to determine anew what sort of country we want to become.

Some see a chance to go back to the free market thinking of the 1980s. But that approach would exacerbate the issues highlighted by Kate Pickett and Richard Wilkinson in *The Spirit Level*, their powerful analysis of the damaging effects of inequality across a range of social factors. It would cement a society of haves and have nots – the very situation that gave rise to Brexit – and double down on the divide between the so-called winners and losers of globalisation.

Alternatively, this could be an opportunity to tackle inequality and bring people together, an approach that sits more comfortably with the values of the Labour party and which would enable people to feel included and able to move forward in society. The provision of decent employment is central to achieving these goals.

But how are we going to do this from outside of the EU? There is no settlement yet on what our future relationship will look like, but it seems likely that the free movement of people will come to an end. That decision alone is likely to lead to a massive shortage of available labour for some of the occupations less favoured by UK citizens; the agricultural sector, for example, relies on workers from overseas to do the picking and the planting. But this could force upwards pressure on wages and conditions as employers attempt – aided, ideally, by government legislation – to make the jobs they provide a more attractive prospect for UK workers.

Similarly, the hospitality and social care sectors rely heavily on EU labour. But according to the latest Jobs Outlook Survey conducted by the Recruitment Employment Confederation, employers are already flagging up a shortage of candidates for permanent and temporary posts in these areas.

So what would a plan look like that would aim to narrow the gap between the top and bottom of society and which would, via the world of work, enable people to advance in their career, improve their living standards and contribute towards the growth of our economy in a post-Brexit landscape?

Let us start with education, the vehicle which should lead to greater prosperity and a richer, fuller life.

The mantra of the Blair government of the late 90s was ‘education, education, education’. And successive Labour governments certainly led to a big improvement in standards and qualifications. But the emphasis

on and higher funding for academic learning and qualifications was a mistake. There is a snobbishness about academic learning in this country which has been with us for many years and which is not helped by a belief that good GCSEs and A-levels are the only valuable educational outcomes.

To this day schools are funded and rewarded by the number of young people staying on in the sixth form and the percentage of pupils gaining five good GCSEs. Not only does this neglect or undervalue the skills or abilities of non-academic children, it positively discourages the school from pointing a young person towards vocational learning. Many schools will not allow company representatives in to talk about apprenticeships even though they may be a better route for some pupils, because it is not in their financial or status interests to do so. It cannot be beyond the wit of the Department for Education to devise a recognition and reward system which recognises vocational as well as academic achievement.

What's more, there is a serious shortage of girls studying maths and science subjects. Qualifications in these areas generally lead to well-paid and rewarding careers. The report of the 2006 Women and Work Commission, *Towards a Fairer Future*, recommended two things which still hold true. It noted that girls and boys approach maths and science very differently and based on evidence presented they recommended that girls and boys should be taught these subjects in separate classes. The report also promoted the Computer Clubs for Girls programme which recognised that girls' interests are very different from those of boys and proceeded to teach IT to girls in a way that caught their imagination and interest. While some say this is pandering to stereotypes, the programme has proven to be very successful in helping girls to maintain an interest in a subject previously thought by many of them to be geeky and not for them.

Many employers bewail the fact that it is hard to recruit apprentices. This is not helped by the issues raised above but neither do enough employers cast their nets widely enough to interest or include girls and young women in male dominated areas of work. Women into Science and Engineering (WISE) has done good work helping employers to present images in their publicity material which do not put women off and which would help a female applicant to believe the ad was aimed at her.

Employers must be encouraged to continue with training and apprenticeship opportunities even though many will be feeling financially worried following the Brexit vote. We will never be able to compete on the global stage unless we have a well skilled and engaged workforce and the likelihood of simply importing those skills is fast slipping away. It is more important than ever, then, to invest in a homegrown future.

Alongside a need to improve the skills base we need to more seriously address the productivity gap. As Nita Clarke of the IPA writes elsewhere in this pamphlet, employee engagement is the missing piece of the productivity puzzle. Back in 2011, David Cameron launched an initiative entitled 'Engage for Success', which is a not for profit organisation standing for better work and better working lives which it promotes through events and its website.

It is said that the preponderance of low-paid low-skilled work is at the heart of our poor productivity performance. Improving skills and helping people to feel valued automatically encourages a feeling of ownership which in turn produces a greater willingness to contribute to the greater good of the workplace or company. Much of the work done by the IPA on this subject is carried out in conjunction with the relevant trade union, demonstrating that the presence of a union with good relations with the employer is not a substitute for an understanding of

the value of engagement. The best of all worlds would encourage both.

The government's Catapult High Value Manufacturing Scheme, which is designed to enable innovative ideas to be translated into products, is helping employers and others to research new and innovative ways of using the latest technological ideas and equipment. Its strategy encompasses developing large scale projects to help transform major manufacturing markets and supply chains, to create collaborative relationships with universities and research councils and to strengthen capability and competence. This initiative is welcome and to be supported and encouraged. We will need to be at the top of our manufacturing game if we are to broker good trade deals with our international competitors in our post-Brexit future.

Digital platforms, which constitute what is known in the EU area as the 'collaborative economy', are a fast growing part of the casual, slightly loose employment life based upon an individual and a client connecting together to do short, task-based work. The EU has expressed concern about the possible lack of adequate consumer and social protection in the collaborative economy and has conducted a consultation exercise and run workshops to identify issues and develop a deeper understanding of the implication of the growth of this sector of the economy.

Guidance and rules are likely to be introduced by the EU to ensure protection of the users of the digital economy across Europe. But once the UK is outside of the EU, where will the protection for UK citizens come from? And given that technology does not respect or understand borders between nations, how will UK citizens be protected from wrongdoing on inter-European deals?

Many protections for UK employees stem from Europe. Within months of the Labour government being elected in 1997, the social chapter was introduced with a great fanfare from the trade union movement. It gave UK citizens access

to rights such as equal terms for part-time workers, protection when a business changes hands, maternity and paternity rights, four weeks holiday entitlement, equal pay and many more. These have been described by many Conservative MPs as 'red tape' and therefore a nuisance; the post-Brexit future doesn't look good. The trade unions will have to play a key role in negotiating deals with employers to retain rights and protections which workers have enjoyed for many years.

Unfortunately union density is not as high as we would like to see. It is much easier to talk of recruiting in unorganised sectors than it is to actually do it. There is no history of unionisation in the retail sector, social care is so fragmented it is hard for unions to deliver a cohesive message and despite attempts over the years unionising the hotel and catering industry remains a tricky proposition.

One major trade union success in recent years has been the unionlearn programme. Appreciated by employers, it has given thousands of workers the tools to improve their lives and their work opportunities. Starved of funds by this government it should be seen as a priority for the future.

There is no silver bullet to solve today's employment dilemmas. But much can and will be achieved by investment in education, training and research, and by taking a partnership approach to productivity and growth, and by enabling women to participate in the labour market to their full capacity. All of this will be harder without the protection and strength provided by membership of the European Union. Yet it prompts us to consider what kind of country we want to live in, and thus provides a chance to renew our economic and industrial strategy for the digital age.



Discussion Guide: Changing Work

How to use this Discussion Guide

The guide can be used in various ways by Fabian Local Societies, local political party meetings and trade union branches, student societies, NGOs and other groups.

- You might hold a discussion among local members or invite a guest speaker – for example, an MP, academic or local practitioner to lead a group discussion.
- Some different key themes are suggested. You might choose to spend 15–20 minutes on each area, or decide to focus the whole discussion on one of the issues for a more detailed discussion.

A discussion could address some or all of the following questions:

1. What policies should social democrats consider to ensure that the hollowing out of the labour market doesn't leave swathes of workers behind?
2. How can our education system be transformed to prepare students for the jobs of the future?
3. Does technological innovation open the way towards widespread automation, basic income and more leisurely lives, and if so, is that a good thing?
4. What forms of cooperative organisation and collective bargaining are best suited to support workers in the new world of work?

Please let us know what you think

Whatever view you take of the issues, we would very much like to hear about your discussion. Please send us a summary of your debate (perhaps 300 words) to debate@fabians.org.uk.

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CHANGING WORK: PROGRESSIVE IDEAS FOR THE MODERN WORLD OF WORK

The world of work is being rapidly transformed by technological innovation and globalisation. Across Europe, exciting new opportunities, new jobs and new forms of work are emerging. At the same time, the loss of stable patterns of employment is contributing to a growing sense of insecurity and anxiety among today's workforce.

This collection of essays explores the ways in which work is changing, what these changes mean for working people and how the labour movement should respond. Leading politicians, academics, trade unionists and other experts consider what the jobs of the future will entail for workers, politics and the state, and how the left can ensure modern employment benefits everyone.

This is the first publication from the Changing Work Centre, a joint initiative of the Fabians and Community trade union to explore progressive ideas for the modern world of work.



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